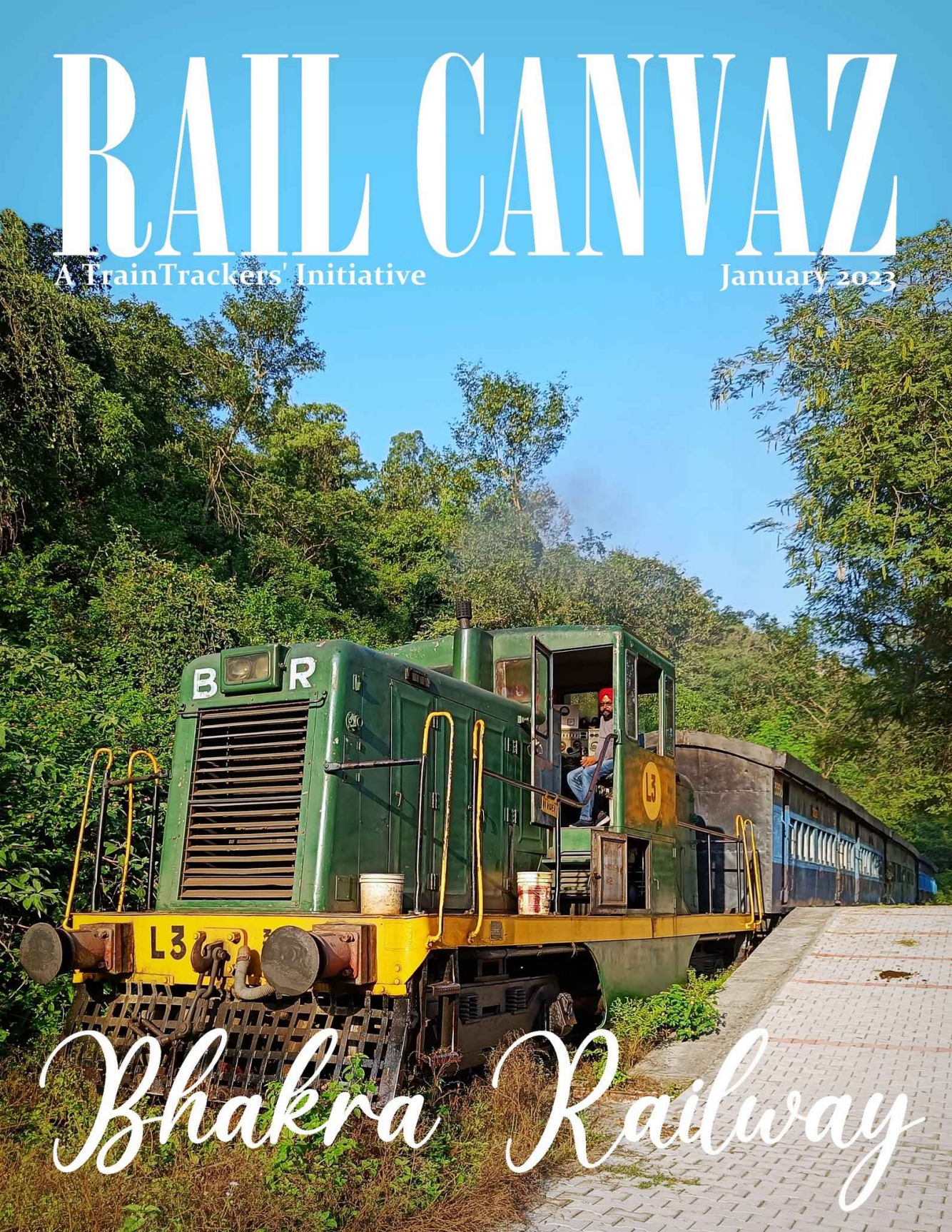
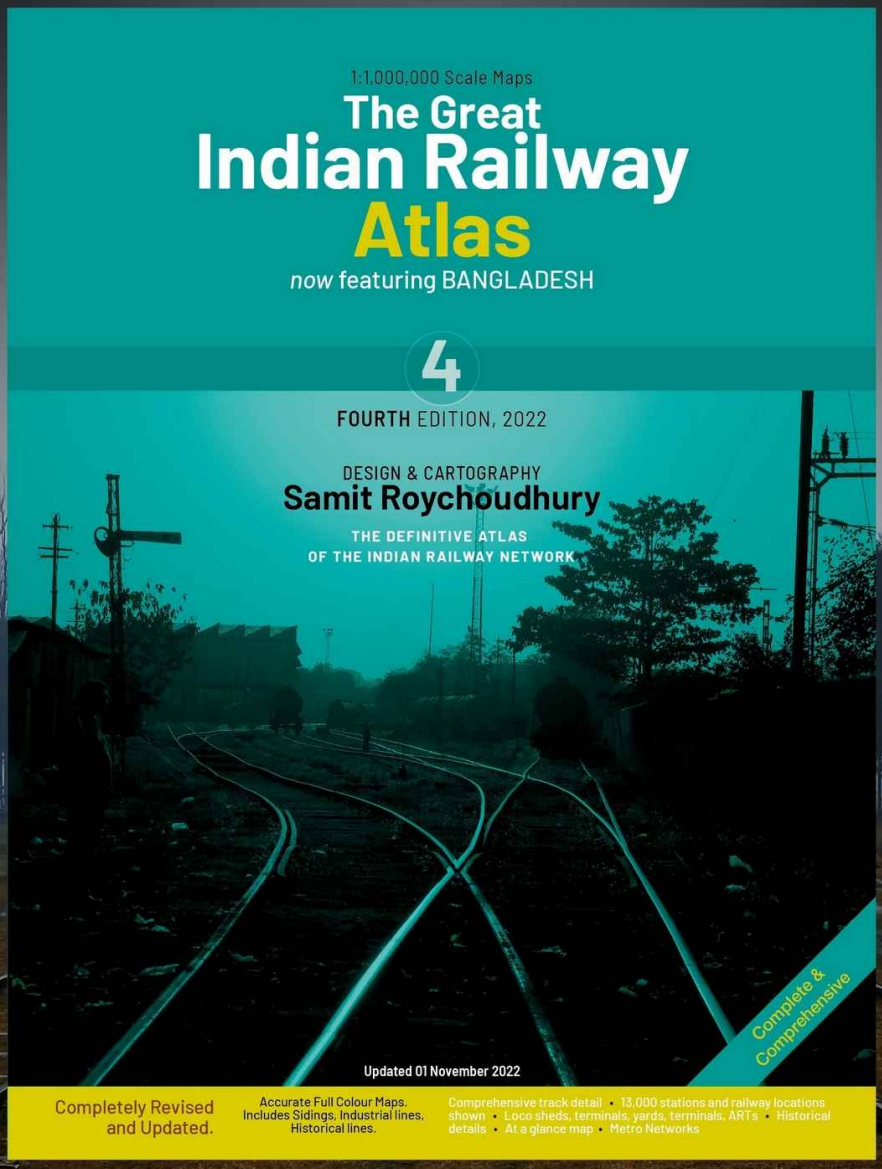
RAIL CANVAZ

A TrainTrackers' Initiative

January 2023



Bhakra Railway



Graphic design being his core competency, **Samit Roychoudhury** considers maps his forte, offering customised mapping solutions, especially railway maps.

He has to his credit **The Great Indian Railway Atlas**, now in its fourth edition.

Available at www.indianrailstuff.com

@

₹ 900/- (Free shipping in India)

EDITORS' DESK

A New Year ushers new hopes and promises as the horizon is alight with the new rays of a timeless sun that has made this world a better place to live. Just like the sun, we have certain other elements in this earthly world which are timeless and ageless and *Bhakra Railway* is certainly one of those which fits the bill like none as the passage of time even couldn't have had any impact on it and it has continued to remain unaltered, unabated. The awe-inspiring magnificence of this wondrous railway is not confined to its unique genre of being a 'Free Service Railway' only – rather the use of age-old Karachi made wooden compartments dating back from 1923 along with the six-decades old imported American locos makes the Bhakra Railway sui generis.

KSR and KVR haven't alone put Himachal Pradesh in the map of Hill Railways of the nation. The Bhakra Railway running through the foothills of the Himalayas, not widely known and frequented by tourists but is equally enchanting and charming. Our cover story revolves around the lesser-known Bhakra Railway which personifies a history of development, culture and legacy thereby defying time and age while serving the nation for over 70 years. A journey by this train not only rewinds those moments of past that may have faded in the sands of time but also recreates them with perfection while being in sync with the present times.

Our New Year issue introduces a new genre in Fiction by **Tapan Pal**. His synthesis, *The Ghost Train – When Paul Mackintosh came calling* is a fusion of his real-life experiences with local urban legend that unravels an uncanny feeling that keeps you glued. Now moving away from phantasm, we have **Anamitra Bose** continuing with his exploration of the different Metro systems of the country as he shifts focus to the Hyderabad, Lucknow and Nagpur metros in this part. The diversities of these metros from different cities of the country are well documented in this ongoing series on Technical Insight. Our regular feature on the Calcutta Trams has **Dr. Debasish Bhattacharyya** scripting about the *Myths vs Truths of Calcutta Tramways*. There is another report on a recently held Symposium for advocating Tramways in Kolkata organised by the Calcutta Tram User's Association (CTUA) in collaboration with SwitchON Foundation based on 'Recognising Sustainable Mobility and co-existing with Nature'.

Following these, **P K Mishra** carries on with his *History of the East Indian Railway* which steps into its 6th instalment. The second article by the AGM, SWR peeps further into the pages of history as it focusses on *Horse Racing at Jamalpore* when the city used to be the HQ of EIR. Another railway man, **Atulya Sinha** – the AGM, SER pens a gem in *WDG4 – The Breakthrough Locomotive* which gives a broad insight into the advent of EMDs in India and what went into making those giant locos run on the Indian tracks as IR had signed a contract with the Electro Motive Division of General Motors

January 2023

RAIL CANVAZ

Vol. 04 No. 01

This is an electronically generated free copy of e-magazine with no printed version, conceptualised and created by TrainTrackers. For any magazine related queries please mail us at : railcanvaz@gmail.com

TRAINTRACKERS
Publisher

SOMSUBHRA DAS
Editor

RUDRANIL ROY CHOWDHURY
Concept & Design

ARKOPAL SARKAR
Distribution & PR

SUBHADYOUTI BOSE, ANAMITRA BOSE
Contributing Editor

SHREYA CHAKRABORTY
Proof Reader

TEAM TRAINTRACKERS

SOMSUBHRA DAS
President

RUDRANIL ROY CHOWDHURY
General Secretary

ANJAN ROY CHOWDHURY
Treasurer

ARKOPAL SARKAR
Public Relations

ANAMITRA BOSE, SUBHADYOUTI BOSE
Members

SOURAV DUTTA, SAGNIK GUPTA, SHOURYA BASU
Associate Members

ARNAB BAGCHI
Technical Head

SUMANTA CHOWDHURY
Chief Advisor

© TrainTrackers. All rights reserved. All material(s) in this e-magazine including texts, article(s), image(s), artwork(s), and design(s), are protected by copyright and may not be reproduced or republished in whole or part without permission from the publishing authorities. Any such activity, if found, may attract legal procedures. Opinion(s) expressed in this e-magazine is/are solely the personal opinion(s) of the author(s) and do not necessarily reflect official view(s) of TrainTrackers or of Indian Railways or any other related organisation(s). In some cases the materials may incorporate or summarise view(s), guideline(s) or recommendation(s) of third parties. Such material is assembled in good faith, but does not necessarily reflect the considered views of TrainTrackers, or indicate a commitment to a particular course of action. TrainTrackers takes no liability whatsoever for the accuracy or completeness of the information(s) and material(s) presented in this e-magazine or suitability for any purpose.

Corporation of USA. Then we have **Mick Pope** presenting a comparative study on the Darjeeling Himalayan Railway (DHR) encompassing his three visits across decades to the World Heritage Railway and **Transport hObO** portraying a Photo Story on the MMTS of Hyderabad.

Apart from the articles, **J L Singh** writes an obituary of *Adrian Shooter: A Railway Pioneer* which is adorned by some invaluable photos about the Ex-President of DHR from **Paul Whittle**. This loss shall be an irreparable one for the entire rail-loving community. We also pay homage to a young railfan in Prithvi Raj by reproducing some of his great works as left us for his heavenly abode quite untimely.

Surfing further, we have a Book Review by **Sanjoy Mookerjee** as he analyses Dilip Kumar Samantray's outstanding work in the form of *Odisha: The Railway Story*. The grand event to launch the said illustrious book at Bhubaneswar and the hospitality offered by the author also finds a place in our instant issue. We also have to offer another book review by **Retd. Justice Soumitra Pal** on Samit Roychowdhury's famed *The Great Indian Railway Atlas (4th Edition)*. To conclude things, we have a report *Rupasi Bangla goes LHB* by **Arkopal Sarkar** on the LHBfication of Rupasi Bangla Express as the author goes all the way to Purulia onboard to frame the memorable moment coupled with an Exclusive Coverage on the *Inaugural Run of the Joka-Esplanade Metro* by **Somanko Tiru** & a story on *Bengal's First Vande Bharat Express* which has not only caught the imagination of the local railfans but also demonstrates the latest fad of IR.

While our regular section on Railway Sketches is once again created by **Dr. Sudakshina Kundu Mookerjee** and **Sambit Chatterjee**, the Photo Junction is a splash of colours filled with the masterpieces from rail enthusiasts across the nation and the News Station focusses on some of the recent happenings around IR.

We sign off by dedicating this issue to the late Adrian Shooter who has contributed to the community of railfanning in more than a way and was a legend in his own right. The DHR Society has thrived under his leadership over the years as we mourn the loss of such a quintessential personality. The last year might have taken away one of the luminaries of our railfanning world, we hope the New Year brings Joy, Peace and Love for all.

Wishing all of our readers and followers a Very Happy and Prosperous New Year 2023 !!!

Somsubhra Das

Photo courtesy : Somsubhra Das

RAIL CANVAZ
A TrainTrackers' Initiative
January 2023

inside stories

Legend Speaks

Cover Story

Bhakra Railway

Somsubhra Das tells the lesser known tales about nation's only 'Free Railway' system connecting the two iconic dams of northern India from Nangal to Bhakra and the significant role it played in the symphony of progress of the nation.

Exclusive

WDG4 - The Breakthrough Locomotive

It is aways fascinating to learn about the interesting stories behind the introduction of new technologies in Indian Railways and when the facts get penned down from a railway man himself like **Atulya Sinha**, it simply adds to the value of the content.

Features

Time Passes Quickly

Engaging stories from the three visits to the Queen of the Hills behind the DHR train by **Mick Pope** spanning across three decades.

Myth vs Truth

Vested interest of parties inside and outside the government has become the driving force behind a huge strive to wipe trams out of the streets of Kolkata and to fulfil this motto, disinformation and propaganda are being dished out against the utility of trams which are nullified by **Dr. Debasish Bhattacharyya.**

Photo Story

MMTS - A Pictoral Journey

transport h0b0 opens his vault once again for Rail Canvaz and this time presents a pictorial journey of Hyderabad's famed MMTS over the years

January 2023

RAIL CANVAZ

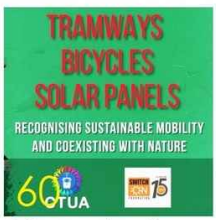
A TrainTrackers' Initiative

inside stories

Features

First T-18 Trainset for Bengal

Somsubhra Das narrates the spectre of VB taking nation by storm and all the craze and zest that captured all and sundry around the newly introduced VB from Howrah to New Jalpaiguri.



A Symposium for Sustainable Mobility

Decarbonisation is the need of the hour but the West Bengal Government seems unfazed about the developments around the world to adopt Green Energy as it is busy 'decongesting' the streets of Kolkata by obliterating the eco-friendly trams. A report by **TrainTrackers**.

The Ghost Train

Tapan Pal comes up with a short fiction on a yesteryear's dreadful rail accident & the spooky experience of a passenger at a deserted station.

Rupasi Bangla - First LHB Run

Arkopal Sarkar reports his first hand experience of the maiden LHB run of Purulia Express from Howrah

Joka-Esplanade Metro Phase-I Inaugural Run

An exclusive coverage by **Somanko Tiru** through some exquisite photos.

Obituary

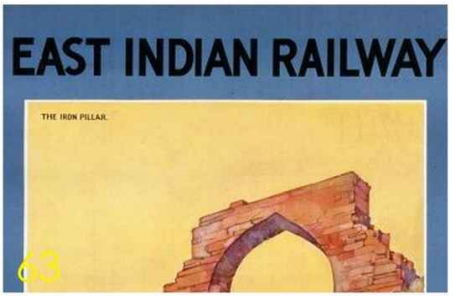
Adrian Shooter

We lost a legend.....

Prithvi Raj

You will be missed....

Exclusive Series



EIR Early Days : 1849-51 (Part - VI)

The AGM, SWR **PK Mishra** peeps further into the pages of history as he presents the sixth chapter on the illustrious journey of East Indian Railway with never heard before facts and figures.

Technical Insight

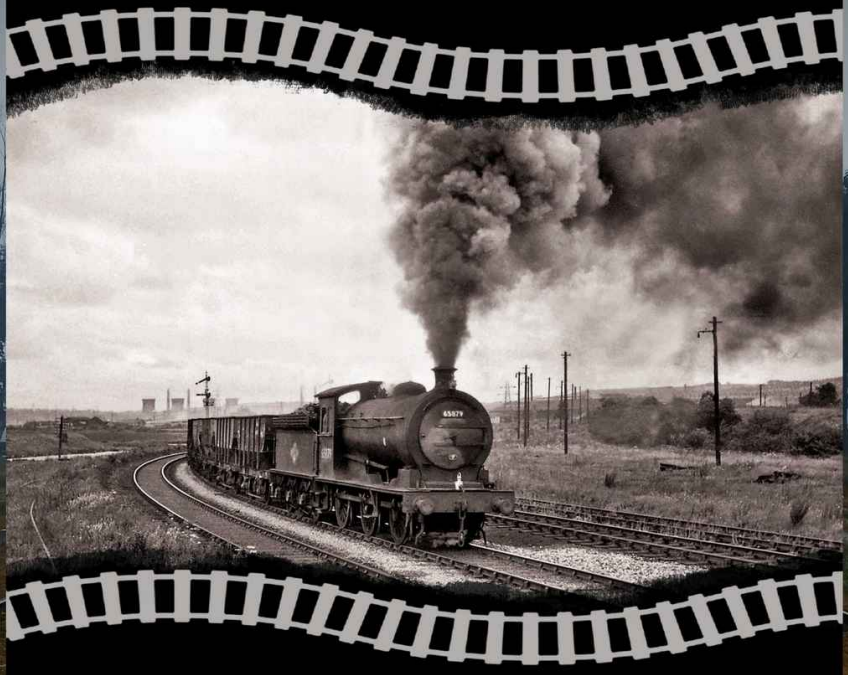
India - the Nation with Growing Metro Systems

Anamitra Bose continues with his journey by the various metros of different cities of the nation and he focusses on the Hyderabad, Lucknow and Nagpur metros in his second chapter of the series.

Miscellaneous

Rail - Nama

The Evolution of the Railways in India
An Eastern Focus



Dipak Raychaudhuri

COMING THIS JANUARY !!!

WILL BE AVAILABLE AT KOLKATA INTERNATIONAL BOOK FAIR

His life was a blessing, his memories are treasures,
He was loved beyond words and being missed beyond measures...

Adrian Shooter : A Railway Pioneer.....

by J L Singh

Adrian regularly welcomed visitors from India to the BLR and delighted in showing them what a well-maintained B Class could still do. In October 2018 he is seen with Director DHR - Mr N K Narzary (Second from right), DHR supervisory staff and DHRS Engineering Director David Mead (Centre back row).

Most professional railwaymen or women are not rail enthusiasts. For them, the railway is a job, not a passion or hobby. One exception that proved to be the rule was Adrian Shooter, who began his career as an Engineering Management Trainee with British Rail (BR) in 1970, following which he worked with or stayed in touch with the railways till he breathed his last on the 13th of December 2022 at the age of 74. He was the quintessential rail enthusiast, rail lover and rail afficionado.

After a series of appointments covering sixteen years in management positions with BR, he was appointed Managing Director of Red Star Parcels, a Customer Facing Organisation in 1987. Following this, starting in 1989, he was one of five Directors reporting to the Chief Executive of BR, who between them managed all BR Businesses. He also assisted BR with aspects of privatisation. From 1993, till he retired, Adrian was Managing Director, Chiltern Railways, and Chairman, Laing Rail Ltd., a Division of John Laing Rail plc. In his latter capacity, he was responsible for Chiltern Railways, London Overground, DB Tyne and Wear Metro, Alltram Ltd. and chaired the Boards of all these companies. Under his stewardship, Chiltern grew its business faster than any other train operating company. Safety, punctuality and customer satisfaction ratings were at, or very close to, the top scores for the industry for the whole of that time.

On his visit to Pratapnagar Narrow-gauge DLS

After purchase by Adrian, B Class No 779 arrived back in the UK from the USA in December 2003. After a thorough overhaul at Tyseley Locomotiveb Works, Birmingham the loco was displayed at the Railfest 2004 exhibition at York. Seen here L-R are Adrian Shooter, David Barrie (Chairman DHRS) and Sir Mark Tully (Patron DHRS).

In addition to the above, Adrian Shooter had several Rail Industry non-exec Director roles including those with the British Transport Police Committee, Railway Safety and Standards Board (RSSB Ltd) and Association of Train Operating Companies (ATOC). In the last named, he was a Board Member for seventeen years and Chairman for two. For five years Adrian was the UK's representative on the Council of European Railways, alongside CEO's of SNCF (French), DB (Germany) and other European Railways.

Since retiring at the end of 2011, Adrian had cultivated a variety of interests including Chairman of CBI West Midlands and Oxfordshire Region (2012 & 2013), Chairman of Oxfordshire Local Enterprise

Partnership, Chairman of Bicester Vision, a Business Led growth agent for the area and Advisor to various Companies including Arup, Railroad Development Corporation (USA). In addition, Adrian had set up a new company, Vivarail Ltd., to create, sell and service low-cost trains. The company led the way in railway decarbonisation. He was also non-executive chairman of two "start-up" companies in the rail supply industry.

Last but not the least, Adrian Shooter was President of the Darjeeling Himalayan Railway Society in the UK since 2015. Adrian was a Fellow of the Royal Academy of Engineering, the Institution of Mechanical Engineers and the Chartered Institute of Logistics and Transport. In 2010, he was awarded

The loco, built by Sharp Stewart, is largely original, still retaining its 1889 boiler. The tender carries the coal (rather than DHR-style above the boiler) and fittings for vacuum and air brakes.

accompanying him to the Rewari Heritage Steam Shed during one of his visits to India. His love for the railway was obvious and came through whenever you talked or discussed the subject with him.

Adrian Shooter finally lost his battle with the Motor Neurone Disease on the 13th of December 2022. He will be missed by rail enthusiasts the world over but particularly in India. May his soul rest in peace.

Photographs provided by JL Singh (RES) & Paul Whittle (DHRS) and are copyrighted.

Adrian's DHR-styled Beeches Light Railway at his Oxfordshire home opened in 2004. In May 2005 Adrian is on the footplate as the loco climbs the 1 in 22 gradient to Rinkingpong Station (named after the erstwhile station on the DHR's Teesta Valley branch).

the CBE "For services to the Rail Industry".

Adventure was never far from Adrian. Along with his wife, he has took to long distance rallying in vintage cars. For instance, they spent three weeks in Burma with their 1930 Ford. In 2010, they drove the same car from Beijing to Paris.

Of special interest to rail enthusiasts in India is the fact that he owns the Darjeeling Himalayan Railway Class 'B' steam locomotive 778 (originally No. 19), which he operated on the Beeches Light Railway in the grounds of his residence in Oxfordshire. Carriages to accompany the locomotive were commissioned from Boston Lodge Works. He had built a station that reflected the style of the stations of the Darjeeling Himalayan Railway in a generic way. He owned an Indian Hindustan Ambassador car as well.

A frequent visitor to India, he knew the country and its railway well. His last visit was as recent as October this year, despite suffering from the debilitating Motor Neurone Disease, owing to which his body was wasting away. He had visited India in March as well, when his weakened condition was fairly obvious but that did not deter him to visit the Darjeeling Himalayan Railway. This writer had the privilege of

Adrian at the controls of No 19 pulling into Rinkingpong Station in May 2015.

Time Passes Quickly...

DHR Over the Years.... My Three Trips to Darjeeling

Mick Pope

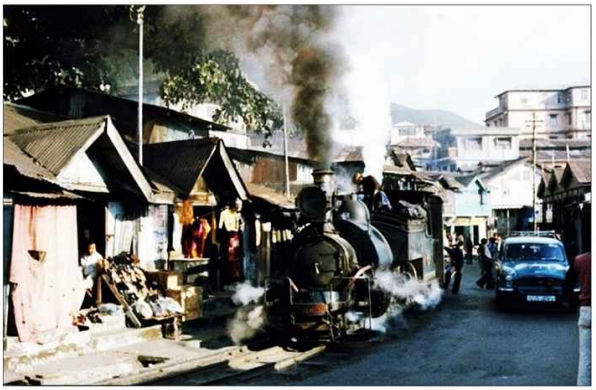
Time passes quickly and gets quicker as you grow older! I was shocked to realize that 42 years have passed since I first visited India to explore its incredible railways. Since then, I have visited on about thirty occasions, not always with the purpose of photographing trains. Searching for a subject on which to write I recalled that I have been fortunate to visit the Himalayas and Darjeeling Railway on three occasions within a gap of 31 years between the first and last. This caused me to think about the changes that I witnessed on the line over that time and to give an account of those three visits.

I first visited India at the end of 1979, although not reaching Darjeeling until 1980, on a tour organized by the UK based Industrial Railway Society. In spite of the society's title the tour included many visits to Indian Railways sites on all gauges. Back in those days, I was one of the younger members of a tour that included older enthusiasts with an awesome knowledge of railways.

January 7th 1980 found us in Calcutta [as it was more commonly known back then] after visiting the loco sheds at Howrah, Chitpur and Santragachi. At Sealdah, as the departure time of the Darjeeling Mail approaches, we find, due to booking complications, the young and fit are relegated to the 2nd Class Sleepers with their bare wooden berths while the less agile get the limited number of 1st Class. Life in the raw for a first-timer in India but, with hindsight, a worthwhile experience as it prepared me for future trips. Surprisingly, I slept soundly but got awaken by the cold breeze as we approached New Jalpaiguri to the sound of the chaiwallahs and hawkers on the platform. It was a foggy morning. We must present our special passes as this being a restricted zone for the foreigners.

Our intended train to Darjeeling, 1D, is waiting but is already full to overflowing and so we await the 09.30 departure and use the time to inspect the stock in the narrow-gauge sidings. This gives us the opportunity to

Locomotive men using 795 as a useful source of hot water to clean up along the way



The classic scene of the train running through Kurseong's main street

examine the locomotives and carriage stock in more detail. In the yard we discover two additional carriages being prepared for our party, one being a chair car with 8 comfortable armchairs. I think that the normal practice was to split trains into several portions if the demand required it. Eventually, we depart behind # 795, one of the Tindharia built locos of 1919.

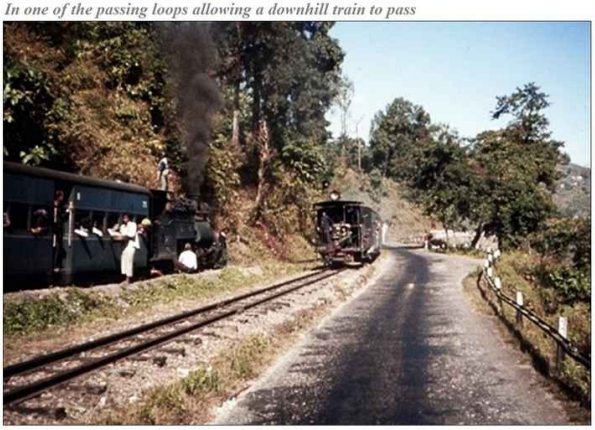
The section to Siliguri is flat. After Siliguri and Sukna we start to climb with the snow covered peak of Kanchenjunga in the distance. I note that the loco is working really hard and that the antique look of the 'B' class belies their power. They are also sure footed and quite speedy given the sharp curves [one loop being appropriately named Agony Point] and frequent road crossings, the lack of slipping is no doubt helped by the additional crew members who sit astride the front buffers sanding the track. I should also not omit the other crew member sitting on the top of the firebox breaking up and feeing coal to the footplate crew. It must be remembered that the journey takes some nine hours, and the train is often late [as I discover on my next visit!].

The zig-zags / reversing points and loops are a novelty and it is impressive how quickly the train negotiates these changes of direction.

In places, it is possible to look down and see the line in four or five places below you. We have frequent water stops that allow photography. At Rangtong we move back into the station and allow another train to pass before easing forward to the water tank, fed by a mountain-side stream. Another attractive feature is the way the railway runs through the centre of some of the towns along the route.

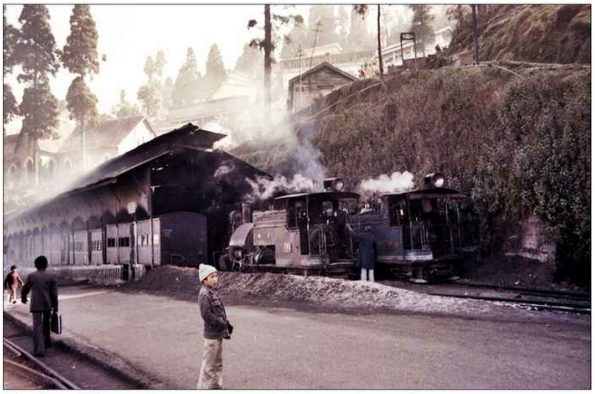
Something that didn't seem to change over the years were the antics of the youngsters jumping on and off the outside of

In one of the passing loops allowing a downhill train to pass



Freight trains on the line

Freight trains on the line



The loco shed on a frosty morning and the locomotives ready to go

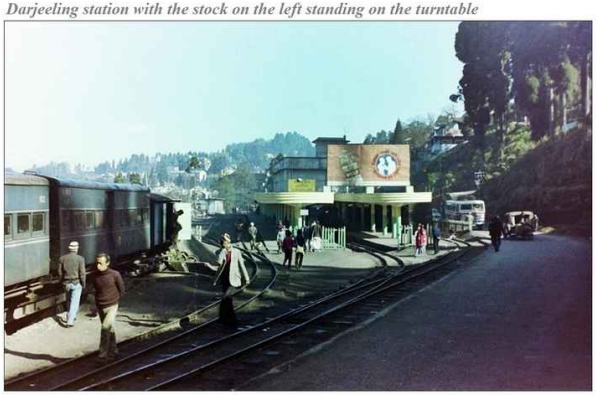
of the carriages. On the way we pass # 790 on a passenger train, # 782 on a freight [the oldest working example on this visit], # 797 on another downhill train and # 780 'Queen of the Hills' at Kurseong [the second oldest but not in steam].

At this latter station our train is taken over by # 788 for the last leg to Darjeeling. The journey takes a little under nine hours and we arrive two hours late in darkness. I later became aware of how lucky I was to see a freight train as this service has ceased, no doubt replaced by road transport.

Overnight we stay in the Windamere Hotel [spelling not quite the same as the tourist spot in the UK from which it takes its name!]. It is a relic of the Raj era in terms of decor, furnishings and routine. We stay in a wooden bungalow with a coal fire and the widowed owner of the hotel entertains at the grand piano while we dine – all courses compulsory. In the morning we have hired taxis to take us to chosen photographic points including, of course, the Batasia loop. I was impressed by the turntable in the rather dilapidated terminus and the open sided locomotive cum carriage shed. I started with a session at Darjeeling station where frost still lay on the ground and the mountains made an impressive background to shots of the 'B' class engines.

Sadly, the schedule does not allow the luxury of a downhill train ride and we take taxis. I learn the valuable lesson that Indian taxis may lack a little in the safety department as I have to hold the rear door shut on the sharp bends to prevent it from flying open! I learned a similar lesson on a ride up to Ooty where I noticed the driver wedged a large rock under the rear wheel when we stopped on a steep hill at a chai stall. Just to conclude the locomotives noted on this trip were – 795 hauling our train, 790 passed hauling a downhill passenger train, 782 and 797 crossed on loops, 780 and 788 at Kurseong. In addition, on the following day, 792 and 788 were seen in steam at Darjeeling loco shed, 803 on the Kurseong school train and 779, 782, 786, 790, 791, 794, 797, 798, 804 and 806 at Tindharia loco shed and works.

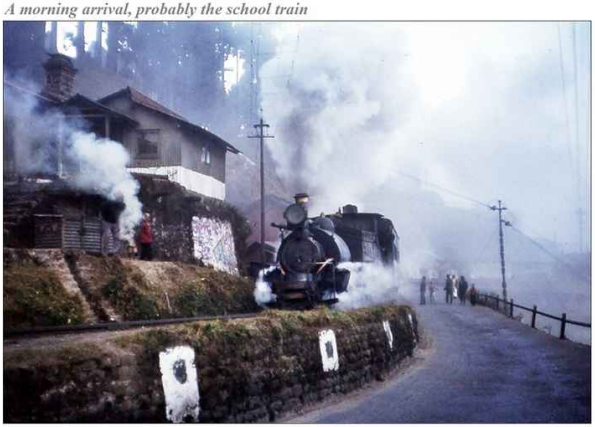
Darjeeling station with the stock on the left standing on the turntable



Scroll forward now to 1982. Having delighted my wife with tales and photos of my trip, she is keen to visit India before we expand our family [grandparents have offered to look after our two-year-old daughter]. So, in spite of my wife's willingness to tolerate my railway obsession, I designed a trip that included some general sightseeing but also visits to Gwalior, Dholpur, Ranchi and Darjeeling. I wonder how many Western tourists head for Bihar!

We followed the path of my previous visit by taking the broad gauge train to New Jalpaiguri and the second departure at 9.30 am from there to Darjeeling. Little had changed from my previous visit and all trains were still steam hauled. At Rangtong, I nearly ended my railfan career, and

A morning arrival, probably the school train



The train paused at Rangtong

A downhill train passing the competition, a bus making the opposite journey

life, as I leaned out of the carriage window to take a shot as the train reverses into the station not realising that the canopy supports are only about a foot from the carriage and was almost decapitated!

The train is very late again and it is dark well before we reach Darjeeling but the good part of this for me is hanging out of the window watching the glow from the firebox and the sparks emitted from the loco chimney. My wife, in spite of her usual calm nature, was nearing the end of her tolerance as the journey had taken almost fourteen hours. I was again able to spend some time taking lineside photos the following day.

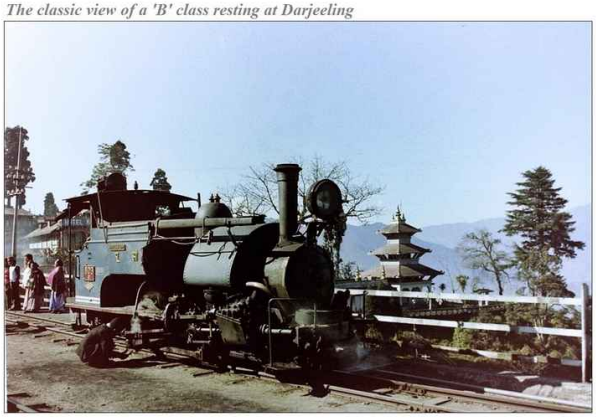
My last [or should I say latest, as I want to visit again] visit was in 2011. Again, I responded to an advertisement for an organised group tour. Entitled 'The Great Circular Indian Railway Challenge', this was not targeted at railfans but rather adventure travellers and travel bloggers. I think I was the only railfan on the tour, the rest covering a wide range of home countries including the US, Australia, Bulgaria and Singapore as well as a couple of Indian citizens. The journey involved reaching the furthest four points of the compass using Indian Railways and that meant covering some 15,000 kilometres in 15 days – lots of overnight trains. Darjeeling was to be the northern most point on the trip.

Arrival at New Jalpaiguri was familiar to me, tumbling onto the platform at an unearthly hour. As this was a race against time we had, out of necessity, to make the journey to Darjeeling by 4x4 road vehicles. The Shangrila Hotel proved to live up to its name being efficient and comfortable with a nice electric fire and plenty of blankets to combat the chilly nights. The next day was free to cater for individual interests, so of course, I was soon at the station. This had been rebuilt since my last visit and the train in the platform was headed by one of the neat little NDM4 diesels rather than a steam loco. I thought was it appropriate that such a small diesel should be entrusted with the long arduous journeys on this line when other remaining lines, like Kalka – Shimla, had the more impressive locos.

'B' class steam locos were still in evidence though inside and outside the loco shed in preparation for the regular 'Joy Train' service or 'Joy Ride' as they call now. Some refer to it as 'Toy Train' as well and I have mixed feelings about this title and the tendency for people to refer to any narrow-gauge trains as 'Toy Trains' – experience the full journey from New Jalpaiguri to Darjeeling behind steam and then call it a 'Toy Train'!

I used a taxi and the 'Joy' train itself to make the most of the time available observing the railway's operation. It was

The classic view of a 'B' class resting at Darjeeling



The new era at Darjeeling. 'B' class and NDM4 together.

Peparation at Darjeeling

interesting to watch the loco crew cleaning and stoking the steam loco's firebox while preparing for departure using a miniature version of the shovel used on mainline locos. I followed an earlier train as far as the Batasia loop and photographed its departure for Ghoom, although some of my fellow group travellers did their best to ruin these shots by making rude gestures from the train window!

I later took a scheduled train to Ghoom and was pleased to watch the 'B' Class run round its train with all the typical tasks involved. I also had a quick look through the fence at the museum exhibits including the miniature 'Baby Sivok'.

The 'Joy Train' loco runs round its train at Ghum

Next day, the return to the plains was again by road. So ended my time on the Darjeeling and Himalaya Railway. However, this was not the last link with the railway as our tour also included a visit to the colliery at Tipong where four 'B' class locomotives ended up after sale to the North Eastern Coalfields. These were 781, 784, 789 and 796. Sadly, none were working at the time of the visit but at least one has since been steamed for visiting enthusiasts.

My musings on these journeys spread over a long period led me to hope that those running the line respect its status as a World Heritage Site. In doing so, I accept the need to cater for travellers, in particular local one who use the line out of necessity but hope that the tourist side of the operation does not go along the line of gaudy repaints or at least keep some of the stock as original as possible as one would in a museum. As to the 'B' class, one wonders how long the surviving locos can soldier on. Many are now spread around the country on plinths and one is operational in the UK. Indian Railways has the capacity to produce new steam locos as demonstrated by the new 'X' class built for the Nilgiri Mountain Railway, so maybe a new 'B' class, with some modern features might be a possibility. Running occasional trains the full length of the line might also be attractive, in particular for overseas railfans. I hope the authorities recognise that they have a real jewel in this line. The existence of a support group devoted to the line gives me hope.

So, hopefully, I can drag my old body for one last visit to this spectacular railway but at least I have many photos to remind me of my past visits.

All photographs used in this article are copyrighted by the author

One of the 'B' classes at Tipong shed

Horse Racing at Jamalpore

P K Mishra

"At Jamalpore, the great workshop of the line, a large European population had been planted, which was constantly on the increase."

East Indian Railway had set up a workshop at Jamalpur in 1862, which would become the largest workshop of the country.

"This settlement, which was situated in a salubrious climate on the confines of Bengal, had been laid out with neatness and regularity; the drainage was complete, and the houses, both for men and officers, had been erected on the most advanced principles of sanitary science. There were two Christian churches, a mechanics' institute, a library, recreation grounds, a racket court, and a band, supplied with instruments from a fine and forfeit fund, and in fact every appliance which could conduce to the rational enjoyment of the men off duty." **-- The Quarterly Review 1868.**

Monghyr was earlier selected by East Indian Company to settle its civilian and military pensioners. It was the preferred retreat for the pensioners and military invalids due to the healthy climate and cheapness of living.

"Monghyr is a favourite town to old and invalided military pensioners and their families, who enjoy here a climate and picturesque scenery, that reconcile them to a life of exile."

Rudyard Kipling would call Jamalpur, the headquarters of the East India Railway and a station entirely made by, and devoted to, the use of those untiring servants of the public, the railway folk.

It was the headquarters of loco, electrical and stores department of EIR and till 1st January 1890, Traffic manager of EIR was headquartered at Jamalpur.

"The board having resolved that the traffic manager should have his headquarters at Calcutta, instead of at Jamalpore, as heretofore, this change took effect from January 1st last." **– EIR Director's Report Half Yearly Meeting 1890.**

"With a view of obtaining the advice of persons engaged in commerce at Calcutta in dealing with questions relating to the traffic, which is so largely centred there, the chairman, when in India, conferred with the Chamber of Commerce on the subject, and a proposal for constituting a local consulting and advising committee having been favourably received, effect has been given to it." **-- The Railway Times 1890.**

The board had obtained the consent of several of the leading merchants in Calcutta to undertake this duty, and they looked forward to very useful results from the arrangement.

About the busy silence of the locomotive superintendent's office, Kipling had termed it a place where a man must put down his name and his business on a slip of paper before he could penetrate into the Temple of Vulcan.

The town was laid out with military precision: to each house it's just share of garden, its red brick path, its growth of trees, and its neat little wicket gate. There was a holy calm about the roads — totally unlike anything in an English manufacturing town.

The institute was the central gathering place, and its half - dozen tennis- courts and neatly laid -out grounds would be always full. "Here, if a stranger could judge, the greater part of the flirtation of Jamalpur is carried out, and here the dashing apprentice—the apprentices are the liveliest of all—learns that there are problems harder than any he studies at the night school, and that the heart of a maiden is more inscrutable than the mechanism of a locomotive." **-- Among the Railway Folk.**

> "It was the headquarters of loco, electrical and stores department of EIR and till 1st January 1890, Traffic manager of EIR was headquartered at Jamalpur."

The Board of Directors had done much to promote the happiness and comfort of their employées.

One of the finest Mechanics' Institutes in India, with its ladies' reading-room, circulating library, general reading-room, billiard room, &c., is the one at Jamalpur, it is in the grounds of the institute that the volunteer band plays on several evenings in the week. **-- Rev. B. Evans, Baptist Missionary, Monghyr.**

Kipling had mentioned that the best and prettiest of the many good and pretty things in Jamalpur was the institute of a Saturday when the Volunteer Band was playing and the tennis courts were full and the babydom of Jamalpur —fat, sturdy children frolicked round the band stand. The people dance —but big as the institute is, it is getting too small for their dances. **-- Among the Railway Folk.**

Horse racing was an integral part of annual sports calendar of Jamalpore. The present golf course was Jamalpur Racecourse those days, racing track extending to six furlough and 191 yards, the hills throwing a protecting arm round nearly three sides of it.

"There was the weird, echoing bund in the hills above Jamalpur, where the owls hooted at night and hyenas came down to laugh over the grave of Quilem Roberts, who had died from the effects of an encounter with a tiger near this

place, A. D. 1864." From the hilltop, tigers and hyenas would sometimes observe the running of horses mounted by their riders in coloured attire and wonder what the commotion was all about.

Horse races were organized at Jamalpore, Ahsensole, Sonepur, Dinagepore, Burdwan etc, places with sizeable European population. In some of the places, European planters of the area would raise prize money by subscriptions. Fertile plains of Behar and Bengal were often studded with indigo factories at frequent intervals and planters were devoted to sport especially on horseback.

Racing was no longer confined to major cities and hill stations. Construction of Railway had further popularised the races as the horses could easily be transported by specially constructed horse wagons from one place to another. Special rules and concessions were issued for carrying horses by Rail companies.

Few owners of horses would be inclined to run them between the racing events as without railway communication and with constant marching and racing, there would be a risk of the horses getting stale just before the great racing meeting of the year.

The Railway Companies would grant concessions in the way of return tickets for racehorses to hold good for two months, at a fare and a half, so the cost of bringing horses from a distance would be much reduced. Charge for booking one horse was at the rate of 2 annas per mile, if two horses were booked together by same sender, charge would be only 3 annas per mile for both horses, and for three horses, rate would be 4 annas per mile for the whole. Horse was to be brought to station for loading one hour before the departure of the train.

Horse-racing was the favourite cold weather amusement at an Anglo-Indian station. The preparation for this sport would become a source of pleasure and occupation, during many previous months, to those directly or indirectly interested in the contest. The races generally commenced sometime in the month of January, which required that the horses should be put into training about September. The horses were usually on the course by gun-fire; and in order to see them take their morning gallop, the trainers generally chose the race- ground for their ride.

A prospectus was issued a year in advance, giving details of rules, prizes for various races, eligibility criteria and names of stewards who would conduct & judge the events. The races were often part of extended Christmas and new year festivities accompanied by station balls and dinners for which tickets were issued separately. The whole town, especially European colonies would become a vast garden resplendent with flowers of various hues.

"Separated from the native quarter of the town by the line of the railway is the European township; this part of Jamalpur is neatly laid out, the roads run at right angles to one another; each house stands in its own plot of land, called a compound, which is taste fully laid out with shrubs and flowers. In many of these compounds, especially at Christmas time, the show of roses, chrysanthemums, and annuals cannot be surpassed, if equalled. **-- Rev. B. Evans, Baptist Missionary, Monghyr.**

JUMALPORE SKY RACES,—1869.

R. C., 6 furlongs 191 yards.

STEWARDS:

J. C. BATCHELOR, ESQ.	R. HEENAN, ESQ.
H. CARRICK, ESQ.	A. V. PALMER, ESQ.
E. DRUMMOND, ESQ.	W. PARKER, ESQ.

MICHAEL FOX, ESQ.

ALLEN STOKES, ESQ., *Hony. Secy. and ex officio Steward.*

"The above races will take place on the 2nd, 5th, and 7th January over the Jumalpore Racecourse. Races to commence at 15-30 hours on 2nd and 5th, and at 7-30 on 7th January."

Prospectus for Jamalpore Sky Race 1870 listed names of stewards. These were J. C. Batchelor, the traffic manager of EIR, D. W. Campbell, the Locomotive Superintendent of EIR, R. Heenan, the district engineer of Bhaugulpore and Monghyr District of EIR, H. Carrick and Capt. Fitzroy Stephen. Allen Stokes, Esq. was Honorary Secretary and Ex Officio Steward.

The Railway Cup - Presented by D. W. Campbell, Esq. , for all bona fide Hacks, the property of East Indian Railway employés drawing a salary of not more than Rs. 400 per month.

It was Mr. D. W. Campbell, who had decided to shift the workshops to Jamalpur, after the famous incident in a hotel run by Bobby Deans.

'Jamalpore Sky Races' 1872 was a six-day schedule packed with various races, balls, dinners, and other events. Measuring and ageing of horses would be done by Stewards, bustling and authoritative; each clad in shorts, jockey-boots, a bird's- eye cravat, black hat, and slashed coat. Weights and handicaps were declared before racing would commence.

'Sky Races' was the term used for a meeting confined to horses or ponies belonging to residents of a certain station or district, but the horses of other areas would be permitted to

PROSPECTUS OF JUMALPORE SKY MEETING.—1872.

Stewards:

D. W. CAMPBELL, ESQ.	A. A. STOKES, ESQ.
G. N. BARLOW, ESQ., C. S. I.	N. ST. L. CARTER, ESQ.
H. CARRICK, ESQ.	G. RAE, ESQ.
G. S. PROVIS, ESQ.	J. LAWRENCE, ESQ.

With power to add to their number.

[The Race and Station Balls will be held in the Institute at 9 P. M on 2nd January, and 9 P. M. on 4th January 1872, respectively.

1*st*.—Monday, Ordinary.
2*nd*.—Tuesday, Races and Race Ball : Tickets Rs. 16.
3*rd*.—Wednesday, Ordinary.
4*th*.—Thursday, Races and Station Ball : Tickets Rs. 10.
5*th*.—Friday, Ordinary.
6*th*.—Saturday, Races and Settling.]

participate in some of the events.

"Ordinaries to take place at 8-30 P. M. in Theatre, while Settling was at 3 P. M. on Saturday, 6th, in Theatre."

No professional riders or natives were allowed to ride. No trained horses, and no horse that has ever started for any other than a sky race will be allowed to run. Winners of each race had to deposit a fee of Rs. 5 and every horse galloped on the course to pay Rs. 5 for the privilege of doing so.

"Nominations, with entrance money, to be made to the secretary not later than 6 p.m. the day before the race. Horses must be declared to start, or pay forfeit, at the ordinary previous to each day's running before the lotteries are drawn."

Races (except Railway Stakes) were open only to subscribers of Rs. 20 upwards to the general fund and no horse could start unless subscriptions and entry were paid. No walks-over were allowed. Races would start only with participation of minimum three horses, bona fide the property of different owners. Colors were to be declared at time of entry and all riders to ride in colors. Every horse to be saddled and ready five minutes before the second bell. Owners neglecting this to take chance of their horses being left behind.

The Jumalpore weights for different class of horses were kept as:. English -12 stones 10 lbs., Colonials- 11 stones 0 lbs., Country-breds -10 stones 7lbs., Arabs -10 stones 0 lbs.

"Anyone lodging an objection, to deposit 2 Gold Mohurs. in the hands of the Secretary, which sum will be forfeited if the objection is considered by the Stewards to be unfounded."

The annual Jamalpore sky races 1869 had started on Saturday, 2nd January 1869, with five races planned for the first day.

The first race of the day was for Ponies 13-2 and under, the distance to be covered was ½ mile. Entrance fee was Rs. 10, with Rs. 80 added from the fund. *Weight 11 st. ; 2-1/2 lbs . allowed for every 1 inch under.*

Second race was open for all Cabools, Entrance being Rs. 30, with Rs. 160 added from the fund.

Third race was for the Railway Cup, presented by Messrs. Carrick and Stokes. Entrance being Rs. 25. Half the entrance money went to the second horse. Winner was put to auction after the race; and, if sold for more than Rs. 400, the balance to go to the race fund.

Fourth race was for all Galloways, distance being 1 mile. Entrance was Rs. 20, with Rs. 120 added from the fund. Fifth games, the Welter Race, was for all horses. Entrance Rs. 30, with Rs. 200 added from the fund.

Second day of the sky races was on Tuesday, 5th January 1869, with four races scheduled on the day.

The first race, 'the Tom Thumb Stakes', was for ponies 12-1 and under. Entrance Rs. 10, with Rs. 70 the Second race was open for all horses, distance being one mile. Winner would be given 'The Behea Cup', presented by Messrs. Thompson and Fox. Entrance was Rs. 40. Half the entrance money was given to the second horse.

The third race was 'Railway Galloway Stakes' for galloways 14 hands and under, bonā fide the property of E. I. Railway employees. Entrance fee was Rs. 10, with Rs. 80 added from the fund.

The fourth race was for 'The Traffic Cup' presented by J. C. Batchelor, Esq. traffic manager of EIR. Only horses owned by employees of railway company could participate in the event. Entrance, Rs. 30. Half of the entrance money went to the second horse.

The third day of the sky races was on Thursday, 7th January 1869, with five races planned for the last day. First race was pony race while the second race was for 'The Jumalpore Cup', presented by Messrs. Burn & Co., the third race was for bona fide Buggy horses and fourth race was for consolation stakes for non-winners. Fifth race was exclusively for native tattoos, to be ridden bare back.

THIRD DAY, THURSDAY, 7TH JANUARY, 1869.

FIRST RACE.—*Pony Race.* 13-2 and under. Entrance Rs. 10, with Rs. 80 from the fund. Weight 11st.; 2½lbs. allowed for every half inch under. Winner of 1st race, 1st day, to carry 5lbs. extra. Distance, ½ mile.

SECOND RACE.—*The Jumalpore Cup,* presented by Messrs. Burn & Co. Handicap for all horses. Compulsory for winners of races 2, 3, 5, 7, and 8. Entrance, Rs. 50. Half the entrance money to the second horses. Distance, 1 mile.

THIRD RACE.—*Buggy Stakes.* For *bonâ fide* buggy horses. Entrance Rs. 20, with Rs. 140 added from the fund. Catch weights over 11st. Distance R. C.

FOURTH RACE.—*Consolation Stakes.* For non-winners during the meeting. Entrance Rs. 20, with Rs. 150 added from the fund. Weight for class. Distance, ¾ mile.

FIFTH RACE.—*Native Tattoo Race.* For all tattoos, *bonâ fide* the property of natives. To be ridden bare back. Rs. 16—Rs. 8—Rs. 4. ¼ mile heats, without dismounting.

The Jamalpur race and celebrations for year 1869 finally concluded on Friday 8th January, after a series of amusements, of each of which everyone declared they had enjoyed more than anything else. Races and theatrical performances, athletics games and balls, were the order for the days. These were conducted most ably and punctually by all the stewards of the different entertainment.

The temporary stables for outside horses were well filled the day before the races, the Beheea and Tirhoot stables being in greatest force, and all looking tolerably well. The Calcutta horses were not visible till next morning, they being in private stables, as were also the Khagoul lot.

The ground was apportioned to applicants long before the meeting, and on the different plots were erected tents. A large shamianah was furnished as a drawing-room; behind was the mess tent, and at each side sleeping tents.

'Vanguard' of M/s Butler and John's had made a considerable sensation by winning the Beheea Cup somewhat easily from Coral. Peri who had beaten Scalaway in a good trial two days previous going to the post lame, and never being able to extend herself. Vanguard, a great big animal, weighing 10 stones and 13 lbs., was a hot favorite from Tirhoot stable but was prone to bolting off the course.

On the second day, Vanguard, Mr. John being in saddle, again had it all his own way in the big races, thereby earning for himself a good heavy penalty in the following day's

handicaps.

Hector, a very dark horse of the Calcutta stable, did well considering the galloping he had done round the course before the races came on.

The Raneegunge Crack Banker had won the Railway Cup after a good application of whipcord, and Madame Rachel made a good race of it, considering the weight she carried and her bad condition.

Zouave had beaten Sorrow for the Open Galloways, after a pretty race all the way round, and Don Juan (late Firefly) disappointed the natives by beating Royal Charlie, a game little Tom Thumb.

Coral had no difficult task in disposing of her opponents for her master's Cup' which Mr. Batchelor, the traffic manager of EIR most handsomely offered again for a handicap race on the third day for all losing horses.

"Brunette, ably ridden, as easily won the Railway Galloways from Rajah, Sorrow not being sent for this race on account, it is said, of an overreach in his Saturday's gallop, and Royal Charlie won the Tom Thumbs in good style for his owner."

The third day had brought a large number of the fair sex to the stand in the morning, though it was early and cold. Don Juan again landed the ponies easily; though Vanguard did not do the same for the big purse, *he bolting off the course the first time of going round, letting in Hector who had it all his own way after three-quarters of a mile, Coral not being able to do the distance with him.*

The oddly named Scalaway took the Traffic Cup in capital style, hard held, and the gallant little Sunbeam again went away with the Jamalpore Cup to the delight of everyone who knew how thoroughly his owner, Mr. Stokes, deserved it for his trouble in getting up such a jolly meeting.

With Killalan's win for the Consolations, the races terminated, and we were all ordered home to breakfast by judge, whom Sonepore goers would have recognised as their honorary secretary, to whom we owe so much for his kindness in judging and handicapping, and for his assistance generally.

The Athletic Games did not produce nearly the fields of last year, Radford having established such a reputation that few seemed to care to try what a year had done to make him worse or better. Maclellan performed well with the hammer and 24lb. shot, beating last year's winner, MacDowell.

The 3/4 mile was won by Roberts after a very slow run race. Radford added again to his laurels and his plate by carrying all before him in the ¼ mile race, leaving his men safe 80 yards from home.

"The sack and three-legged races gave the usual amount of fun; and the natives' races filled well, the jumping in the hurdles being much better than usual. Mrs. Carrick kindly gave away the prizes to the several winners, addressing a few kind words to each, Radford and Sefton being the principal recipient." -- **The Oriental Sporting Magazine, 1869.**

Sonepore Races - The Bankipore Railway Station was about 5 miles from Sonepore so horses could be easily brought there

On the 2nd, 5th, and 7th January we have some sky-races; and if, as I hope, some tolerably good cattle be entered, both the sport and the racing should be good.

On the 4th and 6th the lovers of athletics may see some capital examples of foot-racing, jumping, &c., &c.; and on the 5th a flower and vegetable show will be held, as a rest amid the labours of the week, and to exhibit the skill of our amateur "mallies!"

The votaries of Terpsichore will not be uncared for and one if not two balls will probably take place; but as the arrangements concerning them are not yet quite "pucca," I cannot speak positively about them.

I may as well add that the race-course has been enlarged, and also that the ball-room has been renovated and improved.

To conclude, I am sure that a very hearty welcome will await such of our friends as will come, and I do not doubt but that all who do come will go away well pleased with their New Year's holidays at Jumalpore.

JUMALPORE,
2nd September, 1868.

I am,
Yours faithfully,
SPIKES.

by EIR lines. Sonepore racing prospectus mentioned that *gentlemen sending horses to the meeting should communicate with the Secretary as soon after the 1st of October as possible, to enable him to make arrangements for erecting stables at Sonepore.*

The racecourse was a nice circle of turf around cultivated land, and nearly surrounded by trees. On one side of the course there was a spacious ballroom, having a broad and long verandah.

"The latter commands a full view of the course and is the Ladies Stand. Beyond this, and attached, is a long room, used as a supper and lottery room; and to the east of these buildings in a graduated flight of steps forming the Gentlemen's Stand, having lots of accommodation for spectators, while behind is the enclosure and weighing room; the whole forming a most complete racecourse, with every requirement for the comfort and use of spectators, owners of horses and jockeys."

The time to see the planters in all their glory was during one of their race meetings, the chief of which was that of Sonepore, the other being Mozufferpore in Tirhoot, Mootihari in Chumparun, and Chupra. At these fixtures each of the leading planters formed a camp, to which he invited his friends and any strangers who might happen to be nearby. The usual programme was four days' racing on alternate mornings, four balls on race nights, lotteries on non -ball nights, hunting and paper- chasing on non- race mornings, polo every evening, lawn tennis all day, jolly dinners, delightful parties, and occasionally a cricket match. Each meeting lasts for about ten days. -- **Indian Racing Reminiscences.**

A Day at Sonepore Course

The day would start with the bang of a big cannon, the 'gunfire,' and meant that dawn was breaking. It was immediately followed by local band playing some noisy tune as they marched along the road through the centre of all the camps, and having got to the end of it, back they came again playing louder than before. It was time to get up, dress and rush to camp mess for morning tea and coffee. The carriages came to the entrance of the camp, and one either drove to the race-stand, or joined a walking party with those who

wanted the little walk to warm them. The race-stand commanded a good view of the races. The young ladies would insist on betting for gloves and backing the worst horse in the race, merely because it was to be ridden by that good-looking young officer to whom they were engaged for at least three dances at the coming ball. The races usually lasted till about 10 o'clock, when everyone would go back to their camps and make ready for breakfast. After breakfast no one seemed to think of repose. Some of the younger people at once set to work at Badminton and lawn-tennis; others made up parties to go to see the horses and elephants, and other sights of the native fair; whilst others set forth to pay visits at the other camps, for there was a sort of unwritten law of etiquette that all the camps should call on one another as fast as possible.

By 2 o'clock everyone would be summoned to lunch, and again the champagne flowed freely for those who preferred it to beer or other liquids. After lunch, a few would go on with lawn-tennis, or join in a badminton tournament, until tea was announced. Then the carriages and horses came to the door, and they would drive or ride out to the course.

There was probably a fierce game of polo going on between civil and military, or the planters of two rival districts, or the Public Schools against the World, or any other combination of forces that could be devised. On some days there were cricket-matches arranged between similar parties and factions.

"There comes the drag of the young Raja of Durbanga covered with his lady guests, whilst the Raja himself handles the reins and puts his well broken horses into a gallop along the back of the Tandems driven from high dog-carts seem to have a special attraction for some young ladies, and after the horses have steadied down a little to their work, the reins are usually transferred to the hands of the young lady until some impending danger makes it necessary to resume them from her."

However, collisions and accidents rarely occurred; and as darkness speedily came on, the carriages and their occupants would soon disappear from the course and return to their camps. About 8 o'clock the camp-gong gave the signal for dinner, and a party of about twenty or thirty would assemble in almost every mess-tent. Long before dinner the ball-cards of all the best dancers were filled up, but during dinner a half promise of one more extra might be secured, or some convenient exchange of promised dances arranged to suit the wishes of sisters or bosom friends.

"The carriages are announced to be ready, and are rapidly filled and sent off to the ball-room, from which sometimes they come back to be refilled by a second detachment of the party."

The ballroom at Sonepore was a well-proportioned room which held about two hundred people conveniently. The music was provided by the regimental bands in turns and was usually very good. A long verandah and corridor outside ballroom, not too brilliantly lighted up, afforded a convenient retreat for those who wished to improve the opportunities of the dance by a little further conversation with their partner before she returned to her chaperone, or was carried off by the man to whom she was engaged for the next dance.

If one wandered along the corridor one would come first to the tea-room, and then to the supper-room, which would not be opened before midnight. Dancing was usually kept up with much spirit; and as there were always more gentlemen than ladies, the latter seldom had to sit out a dance for want of a partner. But, at last 'God save the Queen' admonished even the latest lingerers that it was time to go home.

To the men the hour after the ball was often one of grateful refreshment, as they gathered together in the comfortable arm chairs of the al fresco drawing-room, and sat wrapped in their great-coats, smoking the fragrant weed, and protecting themselves from the cold night air with steaming glasses of whisky-and-water, and discussing the events of the day and the plans of the morrow, until they retreated to their tents. **-- Sketches of social life in India by C.T.Buckland.**

Asansol Races

After the railway was extended to Asansol, a new railway town began to form there. A graphic report of Asansol horse race 1875, held from 12th to 15th January, had appeared in the Oriental Sports Magazine 1875. Asansol races, which were started in 1869, would witness large participation from Railways and collieries. Ranigunj, had a considerable European population, composed chiefly of Engineers, other railway servants, and of men employed in the various collieries, though Assensole had been made the chief station.

"Last year were inaugurated the Assensole Races, which are likely to become very popular with the Calcutta holiday-seekers; the distance is so convenient, and the scenery is a change from the paddy plains." **-- W. Newman's E. I. Railway's Handbook, A Guide Historical, descriptive, suggestive 1870.**

About Assensole it was said that there was a good ball room and there was a racecourse not surpassed in India for getting a good view of what is going on or for favourite horse's legs, so that both spectators and horse owner must be satisfied.

Colonel Turnbull had acted as Judge the first day, but had to leave same night, having arranged to sail by the steamer of 14th for Madras. The lotteries were held at 9 pm, on 11th, 12th, and 14th, six of Rs. 500 quickly filling each night, the total value of the eighteen being close on Rs. 15,000. Mr. LeMesurier, the popular Secretary of Jamalpore Races, had kindly officiated as Judge the two last days. A Full-dress Masonic ball, under the patronage of Lodge Pioneer, 1490 E. C. was held on 13th, and was well attended, dancing being commenced at a little after 9, and kept up till near 4 o'clock.

A Cricket match was played on the 14th between the residents and visitors, which resulted in a win for the former by two wickets, after a closely contested innings, the score being 98.

The settling took place (as advertised) the afternoon of last day's races, all being finished most satisfactorily at 7 o'clock.

ASSENSOLE RACES—1875.

R. C.—6 Furlongs, 217 Yards.

Stewards:

C. T. Buckland, Esq. | E. N. Grace, Esq.
J. Cockburn, Esq. | S. Pell, Esq.
C. H. Denham, Esq. | Col. Turnbull.

With power to add to their number.

I. J. Whitty, Esq. ... *Hony. Secy. and ex-officio Steward.*

J. F. Cockburn was the resident engineer of EIR Raneegunge district.

First Day, Tuesday, 12th January 1875, five races were planned for the day.

The Trial Stakes, for all Horses. A Sweep of Rs. 30, with Rs. 200 added. 1 mile race.

Mr. Rennie's	b e m	Barmaid	11 11	Dignum	...	1
,, Hart's	br w g	Sweep	10 11	B.	...	2
Messrs. Albert and Frank's	b w g	Red Gauntlet	10 11	Galwey	...	3
Ditto's	b w g	Piccadilly	10 11	Frank	...	0
Mr. Angelo's	b w m	Polly	10 6	Owner	...	0
,, Robert's	br w m	Norah	10 11	James	...	0
,, Henry's	b w m	Actress	10 13	Steggles	...	0
,, Lawrence's	b e m	Dolly Varden	11 4	———	Scratched.	

"Barmaid and Piccadilly were the favorites, selling for Rs. 85 and 65 in two Rs. 500 lotteries. Dolly Varden did not arrive in time to start. A good race all round, the mare winning by a head in 1 min 58 secs."

The Hack Stakes was open for all horses, the property of Railway employés not drawing a salary of more than Rs. 400 per mensem. Entrance Rs. 20 , with Rs. 100 added.

Mr. Rennie's	b e m	Barmaid	11 4	Mr. B.	...	1
,, Anderson's	ch w g	Speculation	10 6	,, Frank	..	2
,, Eppenstein's	br w g	Exile of Erin	10 6	,, Pryce	..	0

This was run last to give Barmaid a rest, she sold for Rs. 180 in a Rs. 500 lottery, and won by a length in 1 min 46 secs.

The Assensole Cup, value Rs. 500, was open for all Horses. 1-1/4-mile race. Winner of Trial Stakes to carry 7 lbs. extra.

Entrance Rs. 50, Second horse to receive half entrance money.

Messrs. Albert and Frank's	bl w h	Black Eagle	11 0	Mr. Frank	...	1
,, Ross & Harry's	br w m	Fawn	10 11	Bob	..	2
Eppenstein's	b w g	Faugh-a-Ballah	10 6	B.	..	3
Mr. Dale's	ch w m	Pretty Jane	10 6	Angelo	...	0
Messrs. Albert and Frank's	b w g	Red Gauntlet	11 4	Dignum	...	0

There were two Rs. 500 lotteries on this race, the Fawn selling for Rs. 155 and 135 and Black Eagle for 125 and 95, but Black Eagle beautifully ridden by Mr. Frank, won easy by half a length in 2 min 33 secs. Faugh-a-Ballah a good third.

Second Day, Wednesday, 13th January 1875, five races were scheduled.

The Galloway Stakes - For all Galloways. Entrance Rs. 25, with Rs. 200 added.

In a Rs. 500 lottery the horses were sold as follows:- Redstone Rs. 135, Mary Gold Rs. 125, and Hermit Rs. 10. Mary Gold winning a good race by 3/4 length in 1 min 50 secs.

The Selling Stakes - For all Horses. Entrance Rs. 25, with Rs.200 added . The winner to be sold immediately after the race, and any surplus over Rs. 400 to go to the Fund.

Norah and Dart were most fancied, selling for Rs. 215 and 140 each, the latter winning 1 mile race by a head in 2 min 3 secs.

The Burdwan Cup - Value Rs. 500, presented by B. H. the Maharajah of Burdwan. 1-1/4 mile race open for all Horses. Entrance Rs. 50.

Messrs. Ross and Harry's	br w m	Fawn	10 11	Bob ...	...	1
Messrs. Albert and Frank's	bl w h	Black Eagle	11 7	Pryce...	...	2
Mr. Eppenstein's	b w g	Faugh-a-Ballah	10 6	B. ...	...	3
Messrs. Albert and Frank's	b w g	Red Gauntlet	11 4	Dignum	...	0
Mr. Dale's	ch w m	Pretty Jane	10 6	Angelo	...	0
,, Angelo's	b w m	Polly	10 6	Tom ...	...	0

This was one of the best races of the meeting. Black Eagle and the Fawn being the favorites, selling for Rs. 210 and 190, and Rs. 80 and 75 in two lotteries of Rs. 500. The mare winning a good race by a neck in 2 min 28 secs.

Third Day, Friday, 15th January 1875 - Six races were planned for the day.

The Combination. For all horses, the property of Railway and Colliery employés. Entrance Rs. 25, with Rs. 200 added. Weight for class. 1 mile.

Mr. Rennie's	b e m	Barmaid	11 4	Frank	...	1
,, Eppenstein's	b w g	Faugh-a-Ballah	10 6	B.	...	2
,, Anderson's	ch w g	Speculation	10 6	Pryce	..	0

Faugh-a-Ballah sold for Rs. 175 and Barmaid for Rs. 135 at the lottery, but the mare stayed longest, and won by 3/4 length in 1 min 57-3/4 secs.

The Colliery Cup - Value Rs. 400. For all horses. Entrance Rs. 50. A Steeplechase over two miles of a fair hunting country.

Mr. Bob's	b w g	Rival	11 0	Owner	...	1
,, Roberts's	b w g	Norah	10 7	Gerard	...	2
,, Lawrence's	b w g	Hermit	10 0	B.	...	0

Hermit went to the post but did not start, a good race all round, both jumping well, but *Mr. Bob's superior riding told, Rival winning easily.*

Jamalpore Race 1874-75: An interesting account of the race, scheduled from 29th December 1874 to 2nd January 1875, had appeared in Englishman.

First Day, 29th December 1874 - Six races were planned for the day: Pony race, Jamalpur purse, The Railway Purse, Selling Stakes, The Galloway Stakes, Bird & Co.'s Purse.

Jamalpore purse, value Rs. 400, open for all Horses, was won by Fawn. It took just 2 minutes 29 seconds to cover the distance of 1-1/4 miles. Four horses were entered for this race, Hermit, however, only going to the post. Barmaid and Sphynx were most fancied.

One sporting individual offering to bet one thousand even on Barmaid versus the field; luckily for him there was no response. The former was very fractious at the post, causing

several false starts, which evidently ruffled the temper of both Sphynx and his rider; for when the word off was given, the horse preferred the opposite direction and was left behind.

Jamalpore Purse. Value Rs. 400. For all Horses. Entrance Rs. 50. Weight for class. Second horse to receive half the stakes. 1¼ mile.

Fawn	Ross and Harry	1	...	Rs.	44
Barmaid	Namreh	2	...	,,	172
Hermit	Bob	3	...	,,	24
Sphynx	Harts	4	...	,,	28

The pace for the first quarter of a mile was very slow, afterwards it improved, the two mares keeping together to the distance post, when the Fawn began to forge ahead, and won easily by a length. Time 2 min 29 secs.

The Railway Purse was open for all Horses the property of East Indian Railway employés drawing a salary of not more than Rs. 400 per month. Entrance Rs. 30, with Rs. 200 added.

It was a very hollow affair. Naboclish winning as he liked; Grecian Bend remaining at the post, his rider evidently not being accustomed to spurs, using them at the start instead of the finish, much to the disgust of the owner.

Naboclish	b w g	Stewart	1	...	Rs. 120
Mary	c b m	,,	2	...	,, 16
Belochee	b w m	Finch	3	...	,, 24
Grecian Bend	b e b	Eppenstine	4	...	,, 16

Bird & Co.'s Purse - Value Rs. 300. Entrance Rs. 40. For all Horses.

Sphynx	b w g	Harts	1	...	Rs. 176
Inheritress	b w m	Burgh	2	...	,, 52
Sweep	bl w g	Harts	3	...	,, 40
Dolly Varden	bl e m	Lawrence	4	...	,, 48
Hermit	b w g	Bob	5	...	,, 56

All the horses got well away, Sweep making the running for bis stable companion Sphynx to about the three- quarter mile post, when Sphynx drew to the front, followed by Inheritress, close ap. From the distance both riders were at work; a good race ensued, Sphynx winning by half a length in the good time of 1 min 57 secs.

Second Day, 31st December 1874

Four races were scheduled: ***The Ladies' Purse*** - Value Rs. 300; ***The Cabul Stakes*** - Entrance, Rs. 20, with Rs. 100 added; ***Selling Stakes*** - Entrance Rs. 20, with Rs. 150 added; ***Messrs. Burn & Co.'s and Fox's Purse*** - Rs. 400.

The Ladies' Purse. Value Rs. 300. For Country-breds and Arabs. Entrance Rs. 50. Weight for class. 1¼ mile.

Mr. Bob's	br cb m	Deception	9	9	Bob	...	1
,, Navy's	b cb m	Morty	9	9	Crowdy	...	2
,, Bob's	b a n	Pale Face	9	0	Ruxton	...	3
,, Eppenstine's	b cb m	Grecian Bend	9	9	Stalkart	...	0
,, Thistle's	g cb m	Stella	9	9	Price	...	0
,, Stewart's	c cb m	Mary	9	9	B.	...	0

"All the horses got away to a good start, Deception and Morty leading at a rattling pace, with the others close up, until the half mile post was reached, when the two leaders left them, and after a good race, Deception won easily by a length."

Messrs. Burn and Co.'s and Fox's Purse - Rs. 400. For all Horses. Entrance Rs. 50. Distance: 1-1/4 mile

From her running the first day, this was considered a good thing for Inheritress; but after a delay of about 20 minutes at the post, caused by Faugh-a-Ballagh refusing to come up to his horses, she stopped dead when the word 'off' was given, and was therefore out of the race. The first two kept together, and after a good race up the straight, Fawn won by a length. Faugh-a-Ballagh out of it all round.

Third Day, 2nd January 1875

Five races were planned: ***The Tom Thumb Stakes*** for ponies; ***The Railway Consolation Stakes*** for horses, property of East Indian Railway Employees; ***The Winner's Handicap; Pony Hurdle Race, Hurdle Race*** for all horses.

Hurdle Race for all horses was won by War Eagle.

HURDLE RACE FOR ALL HORSES.

Mr. Rainford's	br w g	War Eagle	———	...	1
,, ,,	b w g	Rival	Bob	...	2
,, Bob's	b w g	Hermit	Ruxton	...	3
,, Lawrence's	w m	Sauoy Rate	B.	...	0
,, Morland's	b w m	No Name	Fitzgerald	...	killed.

"War Eagle and Rival kept together all round, both jumping well, the former winning a good race by two lengths. No Name fell, I believe, at the seventh hurdle, and broke her neck, the rider escaping with a slight shaking. Time-2m. 36s." -- **Englishman.**

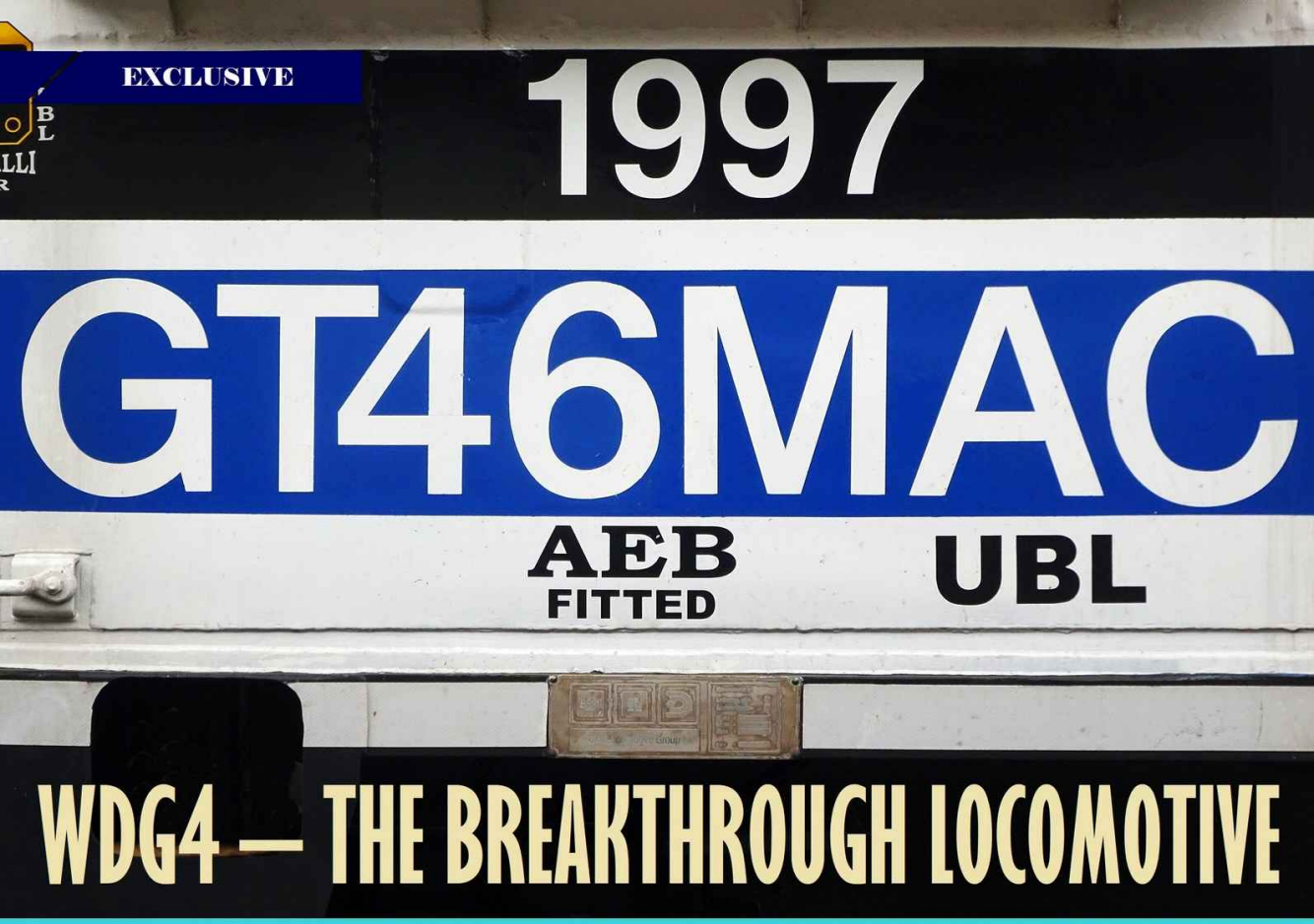
122 years later, when I got opportunity to stay in Jamalpur, we would often cycle the racecourse ground, which had then become a golf course, on the way to shop. I could occasionally see at the outskirts, one or two horses grazing in the course, deeply engrossed in searching the greener grass and supremely indifferent to the track and time when their predecessors had galloped around with hopes and bets riding high on them.

Horse drawn carriage, practically the only means of conveyance, that greeted the travelers at Jamalpur Railway station for almost a century, had also disappeared from the town landscape.

Bibliography:

1. *The Quarterly Review 1868*
2. *EIR Director's Report Half Yearly Meeting 1890*
3. *Englishman*
4. *Indian Racing Reminiscences*
5. *The Oriental Sporting Magazine.1869*
6. *The Railway Times 1890*
7. *Among the Railway Folk*
8. *The Oriental Sporting Magazine vol 2*
9. *The Oriental Sporting Magazine vol 3*
10. *The Oriental Sporting Magazine vol 4*
11. *The Oriental Sporting Magazine vol 5*
12. *The Oriental Sporting Magazine vol 6*
13. *The Oriental Sporting Magazine vol 7*
14. *History of EIR by Huddleston*
15. *Modern India by Henry Spry*
16. *Sonepore reminiscences -H.E.Abott*
17. *Sketches of Social Life in India - C. T. Buckland*

EXCLUSIVE



WDG4 – THE BREAKTHROUGH LOCOMOTIVE

A PERSONAL NOTE

Millions of people across the world were celebrating the coming of not just a new century, but also a new millennium, on the historic night of 31st December 1999. Others were working late into the night, to mitigate the impact of the so-called Y2K bug, i.e., the risk of computer programmes misreading 2000 AD as 1900 AD, since legacy software in many different applications used only two digits instead of four digits for coding the year.

I was neither partying nor sitting in front of a computer screen when midnight struck. I was blissfully sleeping at home, after an exhausting but triumphant experience....

FREIGHT TRAFFIC ON INDIAN RAILWAYS

Rail transport had over 80% market share of the country's freight transportation at the time of Independence. While freight movement by rail increased six-fold over the next five decades, freight movement by road grew much faster till it surpassed the market share of rail transport in the early 1990s.

Rail transport offers several benefits over road transport, e.g., cost advantages in long-haul bulk traffic, much higher energy efficiency, environment-friendliness, efficient land use and greater safety. In the Ninth Five Year Plan, IR committed itself to achieve compounded annual growth rate of 6% in the freight sector, despite severe resource constraints. The following areas had been identified for augmentation of IR's freight carrying capacity:

- Increasing reliability of assets such as track, signals, rolling stock etc.
- Scheduling of trans to improve throughput
- Increasing the speed of freight trains

Atulya Sinha

A mechanical engineer and management postgraduate - Atulya Sinha, has been working for Indian Railways since 1988 with wide experience of design & development, production, maintenance, project management, quality assurance, operations as well as general management. In this article he recalls his experiences with WDG4 locomotives, the earliest high horsepower diesel locomotives used on Indian Railways.

- Improving terminal handling facilities
- Improving wagon design for higher payload to tare ratio
- Use of state-of-the-art high-powered diesel and electric locomotives
- Identifying and strengthening alternative routes
- Increasing axle loads and track loading densities
- Doubling, etc.

DIESEL TRACTION ON INDIAN RAILWAYS

Steam used to be the dominant mode of traction on IR until the 1960s, but the situation changed rapidly after the manufacture of diesel and electric locomotives was started in India. Diesel Locomotive Works (DLW), a production unit owned by IR, was set up at Varanasi in the early 1960s with technology obtained from American Locomotive Company (ALCO) of USA. This plant was set up on a turnkey basis at a green field site.

At that stage, IR had a very small fleet of imported diesels and very little experience of their maintenance and operation. Secondly, Indian industries were not fully developed and would have found it very difficult to meet DLW's exacting requirements for materials and services. Consequently, DLW was designed as a vertically integrated plant with complete facilities for fabrication, machining and assembly of locomotives (including diesel engines), starting with basic raw materials such as plates, sheets and bars. Simultaneously, efforts were made to develop indigenous industry through import substitution.

The mainstay of DLW's production was the WDM2 class broad gauge diesel electric locomotive, of which over 2600 were built. Over the years, IR upgraded and improved the basic ALCO design in multifarious ways. In the 1990s, DLW developed several variants of the WDM2 class, such as 3100 hp WDG3A class for freight services and 2300 hp WDP1 and 3100 hp WDP3A classes for passenger services.

WORLD SCENARIO OF DIESEL LOCO TECHNOLOGY

There were radical changes in the world scenario of diesel locomotive technology in the latter half of the 20th century, as Horsepower and tractive effort continuously increased, AC-DC and AC-AC drives were introduced and micro-processors were used for diverse applications including propulsion control, braking control, auxiliary drive control, wheel slip control, preventing overloading of components, date logging and diagnostics. Major developments in diesel locomotive technology during this period are presented in Exhibit 1.

	Pre 1960	1960-1985	1985 -1994	1994 onwards
Typical Rail Horsepower per Ton	10.9	14.7	20.2	38.4
Auxiliary Equipment Drive	Mechanically driven	Mechanically driven	Motor driven	Motor Driven
Traction Generator	DC generator	AC traction alternator	AC traction alternator	AC traction alternator
Traction Motor	DC	DC with high performance insulation	DC with high performance insulation	AC
Wheel slip System	Detection and correction	Controlled creep	Microprocessor controlled	Individual axle control.
Typical Dispatchable Adhesion	18%	23%	28%	≥35%

Developments in Diesel Locomotive Technology, 1950 to 2000 AD

By the late 1980s, there was much greater emphasis on factors like reliability, maintainability, fuel efficiency and environmental impact. It was increasingly felt that despite sustained R&D efforts, IR's diesel locomotive technology had fallen behind world standards. In the early 1990s, IR took a formal decision to upgrade its diesel locomotive technology to prevailing international standards.

TRANSFER OF TECHNOLOGY AGREEMENT

In October 1995, IR signed a contract with Electro Motive Division of General Motors Corporation (GM/EMD) of USA for Transfer-of-Technology (TOT) for manufacturing and maintenance of a new class of broad-gauge diesel electric freight locomotives to be known as WDG4 (EMD model GT46MAC).

The main features of this contract were as follows:

- Transfer of technology for manufacture of state-of-the-art 4000 hp freight locomotives, equipped with microprocessor-based controls, 3-phase AC-AC traction, etc.
- TOT for family of 710 series of diesel engines in 3000, 4000 and 5000 hp ranges.
- Joint exercise of DLW and EMD in deciding investments in machinery & plant and utilization of existing infrastructure of DLW.
- Duration of the contract was 10 years.
- Scope comprised vertical integration including design, manufacture and maintenance technology
- No advance payments; phased payments for TOT over 10 years.
- EMD was to keep IR informed of latest developments in design, material and process technologies for the duration of the contract.
- IR could develop own sources in India and overseas, with assistance of EMD.
- EMD was to assist IR in world-wide marketing of DLW built products.

Along with the TOT contract, another contract for supply of 13 fully assembled locomotives and 8 partially knocked down (PKD) kits was also signed between IR and GMC in October, 1995.

A comparison of the main features of the existing WDG2 class freight locomotives and the proposed WDG4 class is presented in Exhibit 2.

WDG2	Feature	WDG4
17850	Length over buffer beams (mm)	19964
11500	Distance between bogie centres (mm)	13868
Co-Co	Wheel arrangement	Co-Co
123	Weight in working order (tonnes)	129 approx.
37.9	Maximum starting effort (tonnes)	55
30.8	Adhesion%	41
100	Maximum speed potential (kmph)	100
ac-dc	Type of traction	ac-ac
156	Specific fuel consumption (grams per BHP hour)	150
1.5	Lubricating oil consumption (percentage of fuel consumption)	0.5
3100 (UIC)	Engine House Power	4073(AAR)
Direct	Fuel injection system	Unit injector
1050/400	RPM (max/idle)	900/200
10 days	Frequency of scheduled maintenance	90 days

Comparison of Main Features of WDG2 and WDG4

WDG4 12001 in original EMD livery (restored by SWR in 2021) Photo by Somsubhra Das

The capital cost of a WDG4 locomotive (excluding import duties) was expected to be around three times that of a WDG2 locomotive. However, life cycle analysis showed that manufacture of WDG4 locomotives was financially viable, due to higher fuel efficiency, higher availability and reduced maintenance requirements. Further, the cost of building WDG4 locomotives was expected to reduce as the indigenous content increased.

MANUFACTURE OF WDG4 LOCOMOTIVES AT DLW

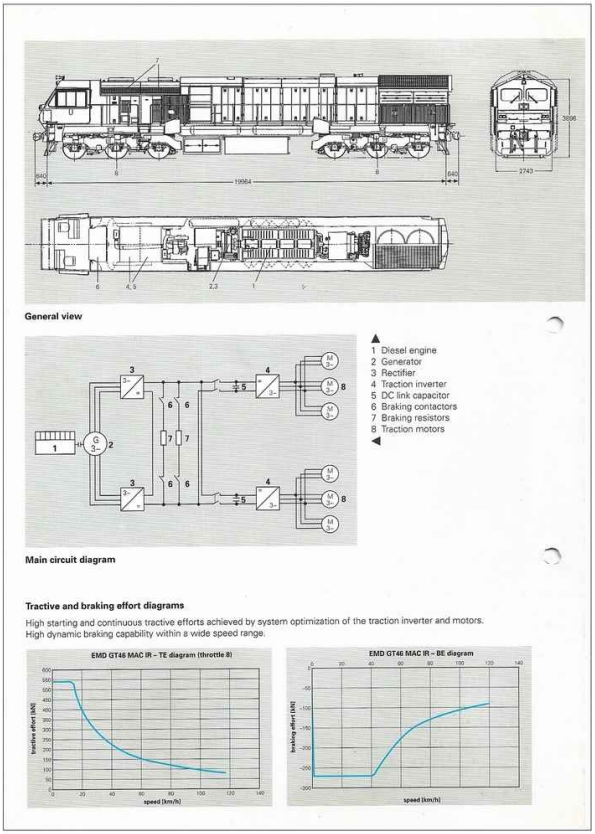
Manufacturing of WDG4 locomotives at DLW was structured into a series of projects, including:

- Assembly, testing and painting of partially knocked down (PKD) kits
- Under-frame fabrication
- Underframe equipping
- Superstructure's fabrication
- Superstructures equipping
- Piping
- Locomotive assembly
- Crankcase fabrication
- Engine components manufacturing

The TOT contract accelerated the pace of change in DLW, impacting not just the design and manufacturing technology, but also the shop layouts, infrastructure, quality and environmental management systems, business policies and human resources.

Some of the major machinery and plant procured by DLW were as follows:

- CNC controlled laser cutting machine, shearing machine, press brake and turret punching press for sheet metal work
- CNC plasma cutting machine for plates
- Plate blaster for cleaning of plates
- Welding manipulators for underframe fabrication
- Ar-CO2 welding plants
- Smoke extraction systems



- Washing machines
- Shot blasting machines
- Deck milling machine
- Cable cutting & Crimping machines
- CNC machining centres
- Environmentally controlled paint booth for painting finished locomotives

PKD PROJECT

In mid-1997, I had been appointed as project manager of the PKD project, which comprised assembly, testing and painting of the 8 PKD kits, to be followed by the same activities for series production of WDG4 locomotives at DLW. It was a great challenge to form separate teams for each of these three activities, set up the requisite infrastructure and train the selected personnel in their respective functions.

In late 1997, I had the opportunity to be trained for six weeks in EMD's factories in Canada and USA, along with some of my team members. Other team members were sent for training in subsequent slots. Throughout the following year, the three teams worked relentlessly to gather information about the manufacturing process, components, tools, equipment, etc. required to perform the required

Loco assembly at EMD Canada *Photo povided by the author*

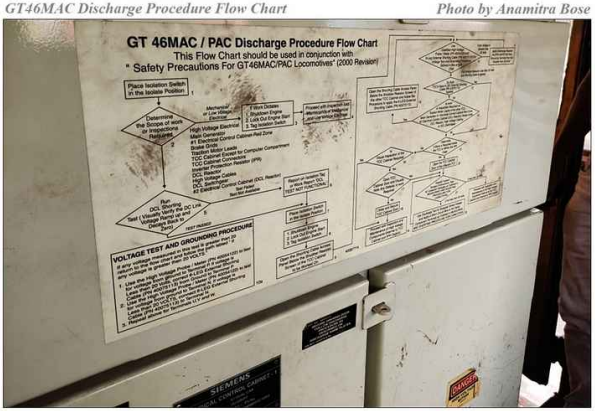
activities. Most of the selected personnel were working on the shopfloor for production of ALCO locomotives, hence, much of the planning for manufacture of WDG4 was done beyond their regular duty hours – which needed both professional and personal commitment. Meanwhile, we received vast quantities of drawings and documents from EMD and we interacted with their personnel through letters, weekly tele-conferences and personal visits.

Our efforts intensified as the date of arrival of the PKDs approached. The ship carrying 12 fully assembled WDG4 locomotives (excluding one prototype which was undergoing road trials in the US) and 8 partially knocked down (PKD) kits was received at Kolkata port in April 1999. While the assembled locomotives were taken to the newly-built diesel shed at Hubli (now Hubballi), the PKD kits were moved to DLW Varanasi.

It was decided to take up the assembly of two locomotives in parallel for optimum learning. Our teams began their work under the guidance of a handful of experts from EMD – of course, DLW had its own experience of thirty years of loco-building, albeit an older technology.

The assembly process ceremonially began with marking out a large area of the shopfloor for WDG4 activities, alongside DLW's regular production activities. The long hoods were

GT46MAC Discharge Procedure Flow Chart *Photo by Anamitra Bose*



Maker's Plate of First EMD GT46MAC # 12001 *Photo by Somsubhra Das*

removed from the underframes, followed by the traction alternator, engine, equipment rack and compressor, each of which had been mounted on the underframes for shipping. We began the process by applying piping and cabling, following the same process sheets which had been used by EMD in their plant in Canada for assembly of the first 13 locomotives of GT46MAC class (renamed WDG4 by IR). Next, the major assemblies, i.e., the traction alternator, engine, equipment rack and compressor were mounted in their respective locations, along with the associated alignments. Next came the lesser assemblies and sub-assemblies which had been shipped in containers and meticulously accounted at both ends. There were daily reviews of the work on the shopfloor and weekly and monthly reviews of the project in the office.

A few weeks later, the initial pair of locomotives moved from Assembly to Testing Shop, where the second team swung into action. Each step of the testing had been studied in detail and the necessary test equipment was purchased from the respective manufacturers in Canada, USA or Europe. The testing experts from EMD Canada – who were experiencing a quite a culture shock at Varanasi – were glad to find that we had practically replicated their own testing infrastructure in DLW's premises.

The last stage of testing was the road test, including propulsion, braking, multiple operation (MU) and push-pull tests, for which two locomotives were required to be coupled back-to-back. In MU testing, both locomotives were controlled from a single cab – this was done in one direction using the cab of the leading locomotive and in the opposite

 # 12001 Cabin view *Photo by Somsubhra Das*

Photo courtesy: Somsubhra Das

The author and EMD expert Mr Roy Inglis standing in front of the first WDG4 assembled from PKD kit *Photo povided by the author*

direction from the cab of the other locomotive. The ultimate test was the push-pull test, in which one locomotive was kept in traction mode and the other in dynamic braking mode to simulate the train load. A pair of walkie talkie sets had to be used to orchestrate the motoring notches of the leading locomotive with the braking notches of the trailing locomotive. It was an incredibly triumphant feeling when 4000 horses pulled us ahead while 3400 horses held us back! The resultant speed was around 25 kmph, well above the minimum requirement of 19 kmph. (Incidentally, this road testing was the secret of my deep sleep on the last night of the 20th century!)

The last activity on the PKD locomotives was painting with epoxy zinc phosphate (EZP) primer and polyurethane (PU) finish, a far cry from the prevailing alkyd paint technology. Even though IR had some experience with PU paints, the EMD specifications turned out to be far more stringent, with much higher solid content and lower volatile organic content (VOC). Such PU paints needed special equipment for mixing and spraying, along with extensive precautions for the safety of painters. Eventually, a temperature-controlled paint booth was set up at DLW for painting of the completed locomotives. Smaller paint booths were installed for underframes and superstructures.

Paint mixing room at EMD Canada *Photo povided by the author*

First assembled WDG4 retsored to its original colors @ Hubballi *Photo by Somsubhra Das*

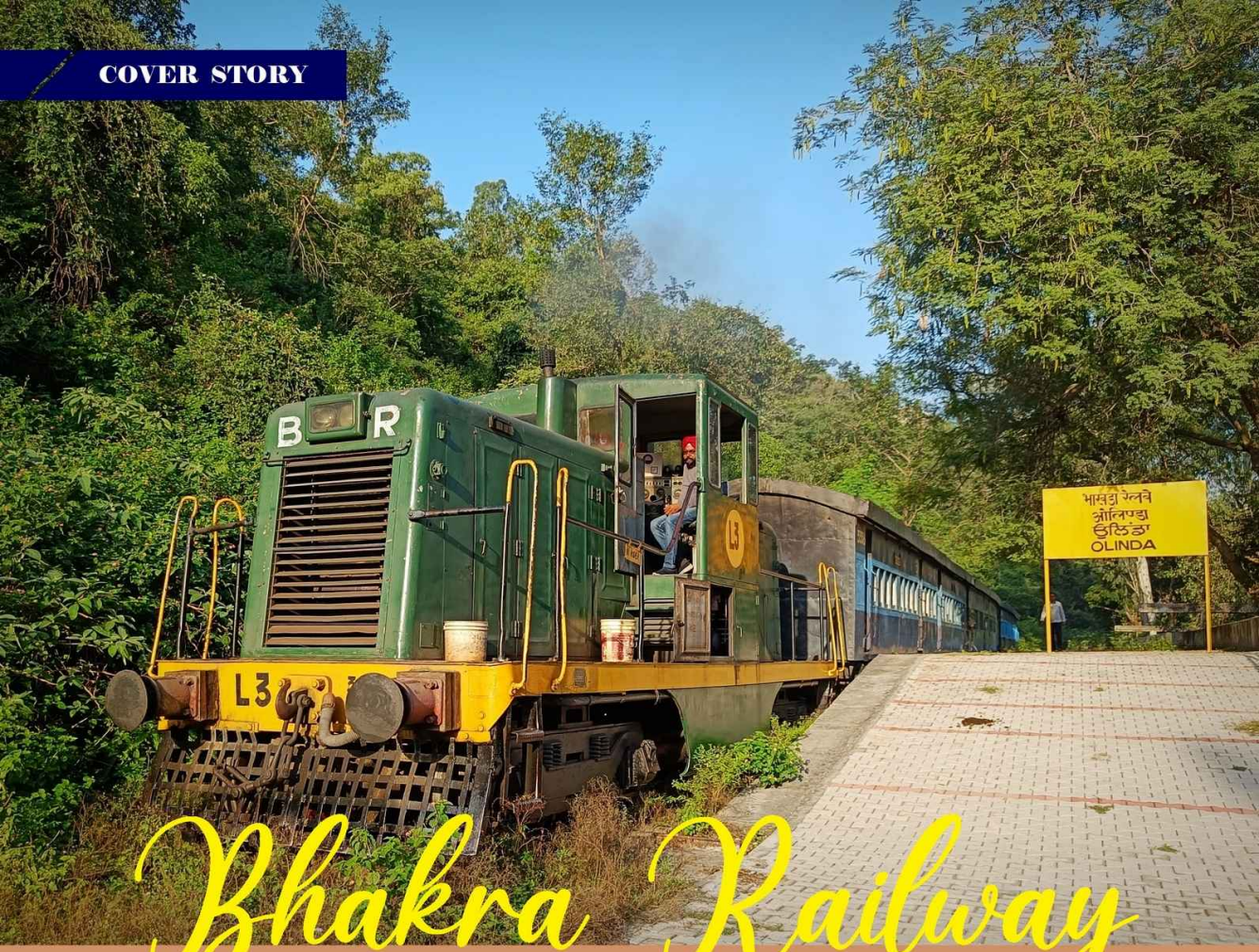
FURTHER DEVELOPMENTS

Many new developments took place after the first batch of partly knocked down (PKD) WDG4 locomotives were completed and dispatched from DLW, such as :

- Series production of WDG4 locomotives with increasing in-house activities
- Manufacture of crankcase and engine components at DLW
- Indigenization of various components for decreasing import content and multi-sourcing
- Development of WDP4 (passenger version of WDG4, built using the same diesel engine)
- Replacement of GTO Thyristor technology by IGBT-based inverters
- Upgradation of 4000hp engine to 4500hp
- Development of dual cab passenger locomotive in WDP4D and a freight version in WDG4D
- Development of passenger locomotive with hotel load arrangement
- Development of 20-cylinder 5500+hp WDG5 locomotive "Bheem"
- Development of high horsepower locomotives for export to Sri Lanka

The WDG4 locomotive was a breakthrough in diesel locomotive manufacture. Subsequently, more than 2400 numbers of high horsepower locomotives based on EMD technology were manufactured in DLW in the 20-year period from 1999 to 2019.

Cover photo courtesy: Somsubhra Das.



Bhakra Railway
- the antic & unique train

Somsubhra Das

On a Free Ride to the High Mountains

"Yes Sir, ticket please...."

Quite a regular episode while travelling in trains as the Ticket Examiner goes through his routine task and passengers produce their travel authorities as proofs of their bona-fide ride. Digging through the entangled facets of memory, I can excavate the happenings that took place while onboard the erstwhile MG service from Shahjahanpur to Pilibhit where the train was stopped amidst barren fields to take the unauthorized passengers to task in what I can recall as a completely frenzy exercise undertaken for a ticket-checking drive. That quirky incident has found its place in *Through the Heartlands of Uttar Pradesh* article published in June'21 issue of Rail Canvaz. On the backdrop of such a hilarious experience, the query of a 'Legitimate Free Rail Travel' has catapulted my inquisitive mind since then. Does any rail travel exist where making tickets is not part of the journey undertaken, scilicet, is there a recognized admissible travelling in train without ticket? Well, the answer is surprisingly YES! It may sound surreal and strange but still the answer remains a YES.

Welcome to the World of Bhakra Railway where the journey is free just like the nature's air, sights and sounds; where no one asks for tickets and there is no hurry to push through the chores of daily life. That's what separates Bhakra Railway (BR) from the rest of the railway system of the country and makes it a standalone one. But the very essence of a *Free Rail Travel* is certainly not the sole driving force behind exploring this unique ongoing-phenomenon of nearly 75 odd years, rather the landscape and terrains associated with this railway along with the history and the strategic importance of the place itself acts as a catalyst that can surely the stir the mind of a ferroequinologist.

- ***The Historical Perspective:***

15th August, 1947 – a date that doesn't need a fresh introduction to Indians as the 'Two Nation Theory' became a

reality. The partition had taken away the lion's share of an irrigated Punjab thereby putting the prospect of an adequate agricultural produce to feed the millions under cloud. To deal with the 'immediate' crises of lack of irrigation and unpredictable floods in the downstream areas of the five rivers of the erstwhile East Punjab, viz. Jhelum, Chenab Ravi, Beas and Sutlej, a plan was floated for the Bhakra-Nangal project over Sutlej and in as early as 1948, work on the project began so as to reap the early benefits of irrigation and power by opening of several irrigation canals and power grids. But soon, the use of waters of the five rivers of Punjab along with Indus became a bone of contention between the 'new neighbours'. After nearly 8 years of deliberations and negotiations under the watchful eyes of the World Bank, India and Pakistan signed the 'Indus Waters Treaty' in 1960 which allowed Pakistan for exclusive use of the waters of Indus, Jhelum and Chenab while India were handed over the absolute rights for use of the waters of the Ravi, Beas and Sutlej. With all decks cleared, India came up with blueprints for harnessing waters of these three rivers to the fullest as the Bhakra Dam construction was completed over Sutlej in 1963 followed by the Beas Project over Beas and Thein Dam over Ravi which resulted in transforming the northern parts of the country into 'Granary of the Nation'.

After reorganisation of the erstwhile East Punjab on 1st November, 1966, the Bhakra Management Board (BMB) was constituted and with that the administration, maintenance and operation of the Bhakra-Nangal Project were handed over to BMB from 1st October, 1967. After completion of the Beas Project, all of its functionalities were also entrusted with BMB which was renamed as the Bhakra Beas Management Board (BBMB) from 15th May, 1976. BBMB maintains some of the largest water reservoirs of the nation in Bhakra and Pong Dam. It is also the third largest installed hydro power capacity in India with 2918.73 MW and regulates water and power supply to Punjab, Haryana, Rajasthan, Himachal Pradesh, Delhi and Chandigarh. BBMB's contribution to the nation's cause has far surpassed its projected utility and its immense impact is not only visible on the urbanization & industrialisation fronts but also on the green & white revolutions in the northern India which is no less than a folklore.

• *The Journey of Bhakra Railway:*

The importance and significance of the iconic Bhakra Dam can be apprehended from the words of acknowledgement from Nehru – "*As the nation rejoices at the successful completion of this monumental project which will provide benefit to the whole nation though more to Punjab and adjoining states of Rajasthan and Himachal Pradesh, I congratulate you all. The accomplishment of this mammoth task represents our resolve to build this immense country of ours. This Dam is not meant for our Generation alone but for many generations to come as well who will drive benefits from it. You have participated in an historic and monumentous effort and those who partake in such a noble cause rise in stature themselves. This Dam has been built up with the unrelenting toil of man for the benefit of mankind and therefore is worthy of worship. May you call it a Temple or a Gurudwara or a Mosque, it inspires our administration and reverence*".

Railway systems have always played pivotal roles in infrastructural developments and the construction of the Bhakra Dam would not have been easier without the existence of Bhakra Railway in 1948. The survey of BR had started from 1946 and it got completed by 1948 with a Rail-cum-Road bridge across the Sutlej after Olinda station. Although the Bhakra-Nangal stretch covers a distance of 13 Km but the total length including sidings goes upto 27.36 Km with a project cost of over two crores, ₹ 2,02,42,310/- to be exact. The line was primarily built to ferry locals and workers engaged in the construction of the dam along with transport of heavy machineries.

Trains on this route were initially propelled by steam locomotives which were later replaced by three diesel engines which were procured from the USA. Bhakra Railway also had its share of the glamourous world of Bollywood as it was featured in a movie starring Rajesh Khanna, the superstar of the yesteryears, named "Chalta Purza" (1977) which also interestingly reminds us of the superstar's iconic scenes from his another film set amidst the Darjeeling Himalayan Railway train.

• *Travelling through Space and Time:*

Have you ever wondered how trains used to be during the colonial era? Have you ever wondered how people used to travel in wooden compartments? Your forage ends here – right at the Bhakra Railway! The Bhakra Railway train is like a *Living Fossil* which has witnessed the vagaries of social changes and dynamics of progress without itself undergoing any significant change since its inception. For BR, it seems that time has come to a standstill for eternity and the moments have got frozen for a lifetime.

Once one arrives at the Nangal Township Station, one can feel the ambience of the bygone era. A single storey station building with an innocuous entrance manned by none other

Nangal Township Station

The Time-table board @ Nangal Township Station

than the iron gates which have been the mute spectator of the times gone by. The Nangal Township Station is not to be confused with the Nangal Dam Railway Station of Indian Railways which is a good 2-3 Km away from this vintage station. Once the BR lines were connected with those of IR but the existence of such a connection at present cannot be commented upon. The 'Bhakra Railway' signage has an aura about it and is quite conspicuously displayed over the tin made roof of the premises. The quaint and serene station premises looks perhaps nonexistent in this greasy world. Life seems to be in a nonchalant and laid-back mode manifesting 'perfect harmony'. The station building hosts a timetable depicting the two services of the day. The services have been designated as 1 UP/2 DN and 3 UP/4 DN – once again throwing us back to those earlier days of railways in India when iconic long-distance trains used to be referred to like this. The premises leads to a ramp leading to the platform where the train is ready to beat the morning blues.

The tranquility of the dawn is suddenly shattered by the growling start of the diesel engine but what can surely give one goosebumps is a look into their built years. Seldom can one find working locomotives in our country dating back from 1953 and doing daily roster! It has nearly been 60 long

Serene platform of Nangal Township Station

GE built motive powers of Bhakra Railway

years since these diesel locomotives have been imported from America and still is in service which is a good enough reason for an utter surprise. It's true that the Fairy Queen has defied time and is still fit but it's only reserved to work for a couple of Heritage Runs in a year. But these General Electric (GE) made 400 HP Bo-Bo machines have been working on daily basis and are the real unsung heroes who has never made it to the spotlight of glitterati. Nevertheless, it is also astonishing enough to find these GE diesels in a country dominated by the ALCOs. Two of the three engines have been up and running while the first one has hung up its boots. These locos with cabs in the middle have nomenclature of L1 with Road Number 32067, L2 with Road Number 32068 and L3 bearing Road Number 32069 and have been painted in bottle green livery with yellow base. 'BR' has been inscribed in huge fonts at both ends of the locos which are fitted with dual beam headlamps. This also happens to be a unique aspect as given the age of the locos, dual beam headlamps were rarest of rare then. However, the locos still look stunning enough – thanks to the top-notch maintenance by BR.

If the BR locos are touching 60 years, its Karachi-made

The old defunct work-horse of Bhakra Railway


GENERAL ELECTRIC
DIESEL-ELECTRIC LOCOMOTIVE
CLASS B-B-88/88-4GE733 400 HP
NO. 32069 DATE JUNE 1953
ERIE, PA. MADE IN U.S.A.


SALIENT FEATURES NANGAL - BHAKRA RAIL LINK :-
THE INITIAL SURVEY FOR NANGAL DAM TO BHAKRA RAIL LINK WAS STARTED DURING 1946.
THE STANDARD SIGNALLING SYSTEM WAS INSTALLED IN 1954.
THE TOTAL COST OF THE PROJECT WAS RS. 2,02,42,310/-
THE TOTAL LENGTH OF NANGAL-BHAKRA RAIL LINK (INCLUDING SIDINGS) IS 27.36 KM
THE NANGAL - BHAKRA RAIL LINK PASSES THROUGH TWO NUMBERS HORSE SHOE SHAPED TUNNELS I.E. BARMALA RAILWAY TUNNEL AND A TUNNEL FOR LEFT BANK POWER PLANT.
NANGAL - BHAKRA RAIL LINK PASSES OVER RAIL - CUM - ROAD BRIDGE 158.5M LONG ACROSS RIVER SUTLEJ AT OLINDA.
SAID TO BE THE ONLY TRAIN IN INDIA FERRYING PASSENGERS FREE OF COST.


भाखड़ा
1.5 अप
नंगल
2.4 डाउन


B.B.M.B. EMPLOYEES

Karachi built coaches of Bhakra Railway


A defunct four-wheeled coach

coaches are turning 100 soon. The rake is a 3-coach consist, the two at either ends in ICF Blue attire while the one in the middle is wrapped in a cream shade with blue waves marked at the bottom. All the coaches are equipped with two sets of 4-wheels each, i.e., 8-wheleer ones mostly of 1923-built. They have wooden benches as seat inside but the one in the middle has an additional cushion of foam to add some comfort. This may mark the difference in class albeit one finds none. The windows are astonishingly 'grill-free' offering travellers unhindered views. The exteriors of the coaches are also fabricated with wood and has Bhakra Railway inscribed on them. These coaches have screw-hook couplers and buffers. The first coach carries a board marked as 'BBMB Employees' while the 'semi-luxurious' one in the middle has a board depicting the train number.

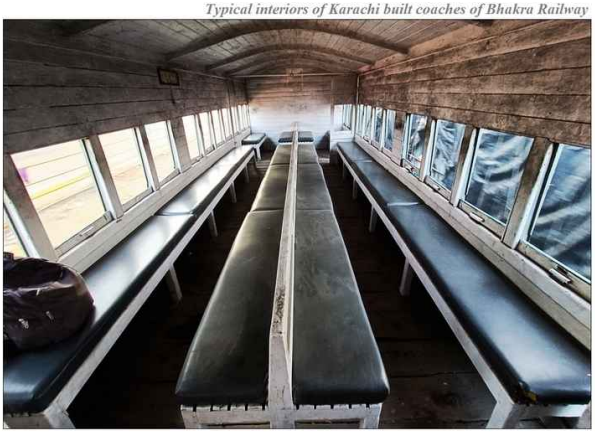
Beyond the solo platform, one can see the yard which houses some spare coaches and goods wagons of antiquity – most of them with 'Not in Use' markings. The yard has had a steady growth of creepers and shrubs making majority of it almost inaccessible. The relegated wagons are of 4-wheeled BCN type while there are some passenger rolling stocks with 4 wheels as well. It is hard to come by such antwacky 4-wheeler coaches and wagons now which were in use decades ago. The unique arrangement of the seats along with the exteriors of coaches and the age old BCN wagons and sheer primitiveness of the entire setup surely transports one back to those days of 'Colonial Raj' and there is no denying the fact that no other railway of the nation has ever been able to revoke the old age charm like the Bhakra Railway !

BCN wagons of Bhakra Railway

After soaking in the ambience, it's time for some time travel. Travelling on this train is like traversing in a time machine where you are expatriated back to those decades when the gap between the haves and have-nots was a yawning one. This train was actually meant for workers of lower strata while the buses, jeeps and other modes of communication were offered to workers belonging to higher tiers in the organisation. Those lines of social divide haven't yet got blurred though. The clock is striking 7:05 and the train hoots as I take my seat in the middle coach for being specifically instructed by the 'Train Inspector' not to board the BBMB Employees marked coach. 'Train Inspector' is a term devised by me for this service as he ensured that every passenger is 'inside the train' and none is hanging off displaying stunts or travelling on the footplates. I am correct in coining the term as I discovered the same person discharging the duties of 'Guard' in absence of one.

Guard is not the only missing aspect in this unique service – existence of a signaling system, rather non-existence, is

Typical interiors of Karachi built coaches of Bhakra Railway



Loco no. 3 gearing up for the first uphill service of the day

there in the list too. Though an information board in the originating station claims about the existence of a standard signaling system from 1954, I failed to spot any. At different level crossings, men have been employed to operate the corroded iron gates as the train trudges past after exchanging flags of consent. The present scenario of a solo service implying the absence of any crossings enroute might have led the authorities for not reviving the preexisting signaling system, if any. Soon after departing the Nangal Township station, the train takes a huge left-hand curve to align itself with the arterial road of the town. Another striking feature of this rail route is the presence of wooden sleepers all along, though some hackneyed iron sleepers along with some cement-made ones were there at the Township station. While travelling, a thought crossed my mind that this train might have seen the upgradation of Fitton cars to Ambassadors and then to SUVs but the residents here have seen the same old train with these primordial locomotives plying across generations – a sight of heritage indeed !

The route has five stations in between Nangal and Bhakra. The first station is Labour Hut while the last one is Olinda. In

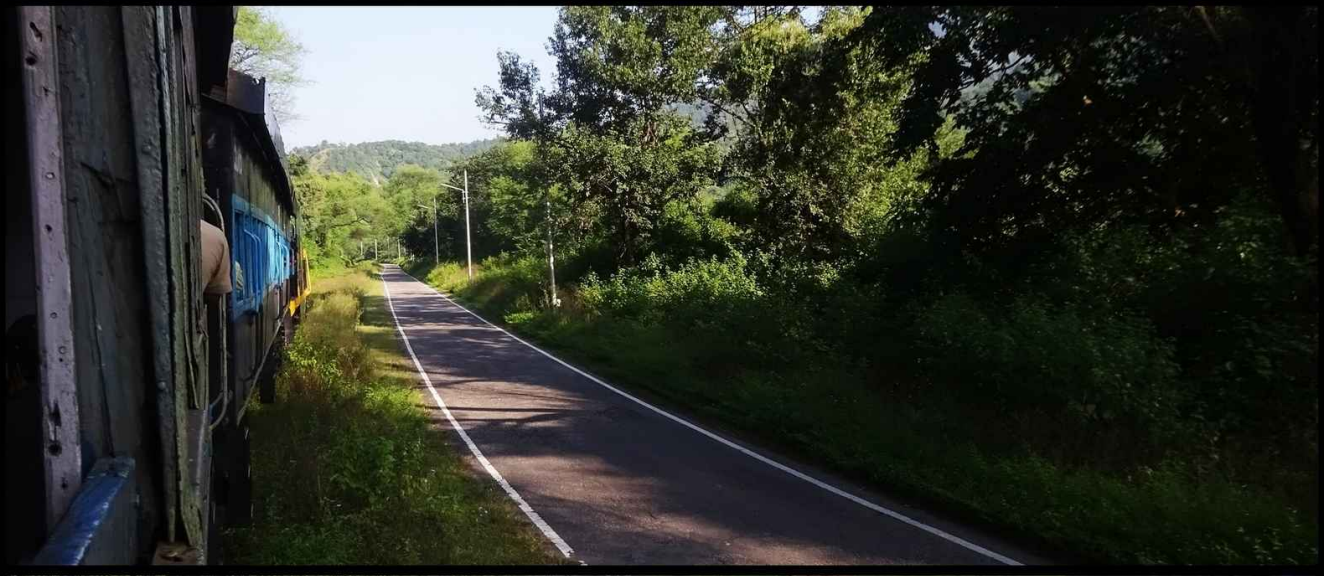
Meandering through the greens

between we have Dobeta, Barmala and Neilla. The existence of Talwara station between Dobeta and Barmala cannot be found anymore. After leaving Labour Hut, we were gliding through the courtyards and precincts of the dwellers to reach Dobeta. By now the sceneries around have dramatically changed as suddenly we were rumbling through the Shiwaliks and the high green hills presented some spectacular views. BR may not feature in the list of the Mountain Railways of the nation but that doesn't stop it from being any less enchanting and appealing. The tracks are now shrouded in mists and tall trees as the landscape gets more and more picturesque leaving me awed by the vastness of the hills and the emerald blue stream of the Sutlej. It seemed as if I have landed in the land of fairytales and folklores.

The information board at Nangal Township station mulls about the presence of two numbers of horse shoe shaped tunnels on the route. We crossed the first tunnel after Barmala but there is hardly anyone in the train to cheer. Two of my co-passengers looks to be duty-bound unwilling horses. The few others in the other compartment are glued to their cellphones. Neilla station saw a local sheriff taking charge of things and his prying eyes nearly interrogated

First station enroute - Labour Hut

Negotiating through the Tunnels



Climbing the Shivalik foothills

The downhill service approaching Olinda

about the whereabouts of the 'passengers' onboard. The train was now climbing small gradients with a diminished speed. During my interaction with the Loco Pilot before the embarkment of journey, I had got some of my queries answered. The LP told that the loco is capable of doing a speed of 40 kmph and guzzles 18-20 litres of diesel per hour. He has also suggested not to travel beyond Olinda for security reasons as the workers of Bhakra Dam are only allowed to travel further. I didn't find any such security checks at Olinda but restrained myself from breaking the protocol.

Soon the train left Olinda for its final destination. Olinda is a remarkable station amidst the hills and greens, very much like the earlier two stations – lonely and peaceful. The length of platform just about good enough to accommodate the three coaches. The absence of any ticket counters in these tiny platforms is a foregone conclusion as this sets these stations apart from their counterparts. The sight of the floras wrapping these pint-sized halts surely stays on with the memories of this route. This genre of stations is set amidst the cradle of Himalayas and always look to hold on to their sanctity and serenity as birds chirp their way around and sunbeams illuminate station boards.

Tranquil Olinda Station

A wait of around 45 minutes for the return journey has passed in a whisker as students have begun to gather for boarding the train along with a handful of other passengers. The cute, small station is suddenly alive and bursting with twittering of the girl students. Soon the honk from the down train is reverberating the hills and it doesn't take long as it arrives with the same set of officials on duty. The downhill journey through the borders of Punjab and Himachal Pradesh is equally interesting with a higher patronage. As the journey on this heritage train is about to end, my heart longs for more. Perhaps a solo ride isn't enough to quench my thirst.

- ***An Experience of a Lifetime :***

Taking ride on this antic train gives one the feel of those days of yore. It also makes one to realize that BR has perhaps a happy demeanour about it – it's happy to serve the tourists, happy to serve the regular passengers and workers and the students day in and day out, years after years and for decades to come. It's a service which seems to exist in a

Fair patronage for downhill train at Olinda

parallel universe – far from the clutches of a civilized and competitive planet gasping for breath. Instead, it echoes the image of a quiet and unadulterated ambience, unperturbed by the conundrums of contemporary world. Eleven years ago, in 2011, a shadow of its closure loomed large given the financial constraints associated with running this free service but BR survived the scare as BBMB realized the association of this train service with the rich heritage, tradition and culture of the locale coupled with its vital contribution towards building the crucial Bhakra Dam that revolutionized the lives of the people of north India forever.

While we had been celebrating our 75 years of Independence through *Azadi Ka Amrit Mahotsav* by imparting varying liveries and murals on locomotives and carriages but none thought about the selfless service that Bhakra Railway has been rendering without much fanfare. Though its relentless service to the nation through decades has mostly gone unnoticed and unrecognized but its inimitable dedication has stood the test of time as the adjoining twenty five villages along its alignment continue to depend heavily on it. May the future generations of these settlements continue to hold this train in high esteem for changing the courses of their lives for good. If the strategic importance of the Bhakra-Nangal Multipurpose Project led Panditji to describe it as the 'Temple of Resurgent India', then the Bhakra Railway must be the **True Flag Bearer** of the 'Rail Badhe Desh Badhe' tagline due to its indelible contribution towards the construction of nation's largest multipurpose project. The story of BR is truly an inspiring one and the journey by this train is a blissful sojourn that not only comforts mind but also soothes the nerves to fill the soul with wonder....

All photographs copyrighted by Somsubhra Das.

Acknowledgements :

1. *bbmb.gov.in*
2. *timesofindia.com*
3. *indiatimes.com*

MMTS: A Pictorial Journey

from the vault of transport hObO

The Multi-Modal Transport System (MMTS), which was suppose to be a combination of bus and train transport [hence the name – multi modal] was launched in the financial year of 2001-02, is a unique project where the Indian Railways and the then state government of Andhra Pradesh shared funds in a 50:50 basis to provide an eco-friendly and affordable public transport system to people that connects the twin cities of Hyderabad and Secunderabad and newly-developing Cyberabad area.

The project was launched on 1st November 2001 using the already existing infrastructure of the South-Central Railway with future plans of integrating the then existing APSRTC city bus services for a seamless connection for the commuters. Apart from using the already existing stations, several new were also built to provide easy access to various localities of the twin city. These new stations include James Street [refurbished and reopened after it was possibly closed when South Central Railway was curved out of Central Railway], Sanjeevaiah Park, Necklace Road, Lakdi-ka-Pul, Nature Cure Hospital, Fatehnagar, Bharatnagar, Borabanda, HI-TEC City [it is HI-TEC City and not Hitech City. HI-TEC is an acronym and stands for Hyderabad Information Technology and Engineering Consultancy (City)] and Chandanagar.

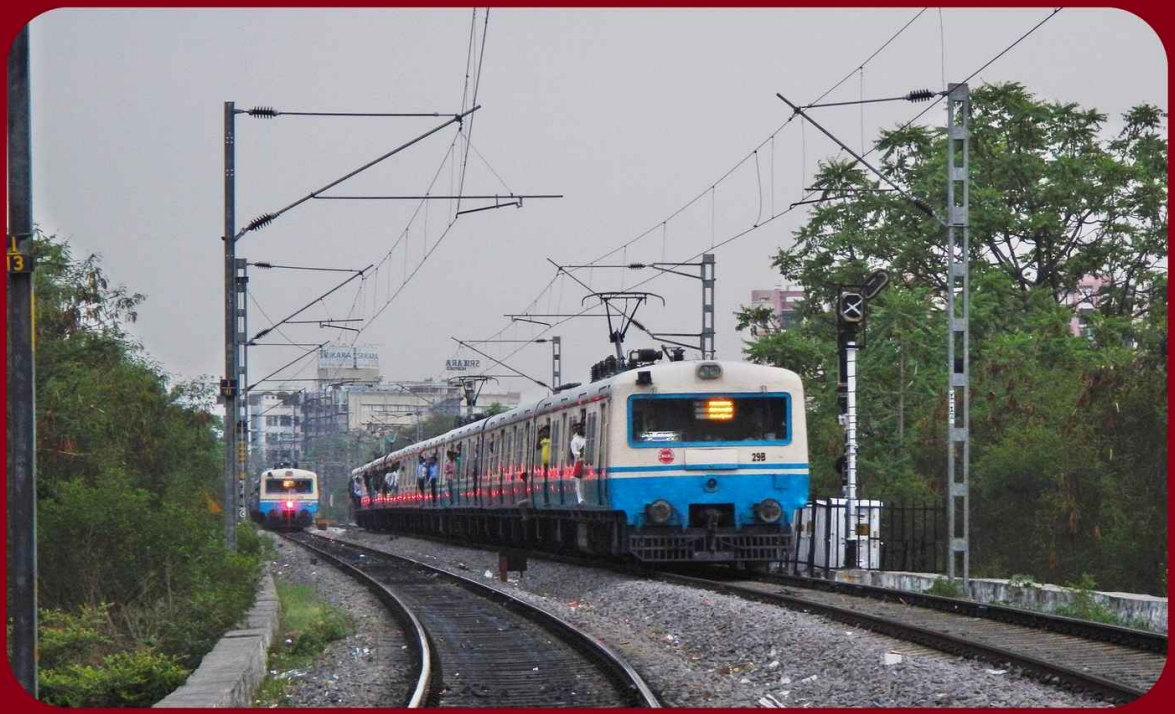
Integral Coach Factory, Chennai, provided the MMTS EMU rakes and for maintaining them, a new EMU carshed was built at Maula-Ali in 2003– a little distance away from Secunderabad on an already existing railway land. The first lot 20 EMUs comprising of 20 motor coaches and 40 trailer coaches were received during early 2003 and first commercial service was launched on and from 9th August 2003 between Secunderabad/ Nampally [Hyderabad] and Lingampally with 48 services per day with 9 rakes of 6 Car EMUs. MMTS services were extended to run from Falaknuma with 24 additional services with effect from 14th February 2004. This phase was constructed at a cost of about Rs. 178 crores.

From 6th June 2019, a small stretch was restored and thrown open for commercial services for the MMTS EMUs on the erstwhile Lingampally – Patancheru route but the newer terminus was built at Ramachandrapuram as the track further crosses the busy highway and needed a grade separator for smooth operations. Trial run in Phase II of MMTS route expansion started from August 2020 on the Secunderabad – Medchal and Maula-Ali – Sanathnagar routes. Trials were also conducted on the Falaknuma – Umdanagar section in March 2021 but none of the new routes saw commercial services yet.

Although the services were launched with 6 car EMU rakes, due to poor planning, penurious frequency of MMTS services and abysmal connectivity by the APSRTC city services, they were quietly curtailed for a 4 car consist before a rise in the frequency resulted in slightly higher patronage which again pushed the rakes back to 6 car operations and from 1st Feb 2008, 2 of the EMU rakes were augmented to 9 car rakes and services increased to 89 per day. From 29th September 2010, two Matribhoomi MMTS EMU services were launched for women passengers between Falaknuma and Lingampally.

Second lot of 12 EMUs comprising of 12 motor coaches and 24 trailer coaches were received between January-April, 2011 from ICF and from 1st July 2011 onwards, all the remaining 6 car EMU rakes were augmented and 10 rakes of 9 car EMUs were formed while the number of services increased to 121 per day. The first 12 car MMTS EMU rake was introduced on 1st May 2019 and currently all of them have 12 coaches after the South Central Railway inducted more rakes from ICF.

An MMTS local departing from Begumpet towards Nampally. This view is completely blocked now as the metro flyover came up next to the road flyover from which this picture was taken. (27 May 2014)

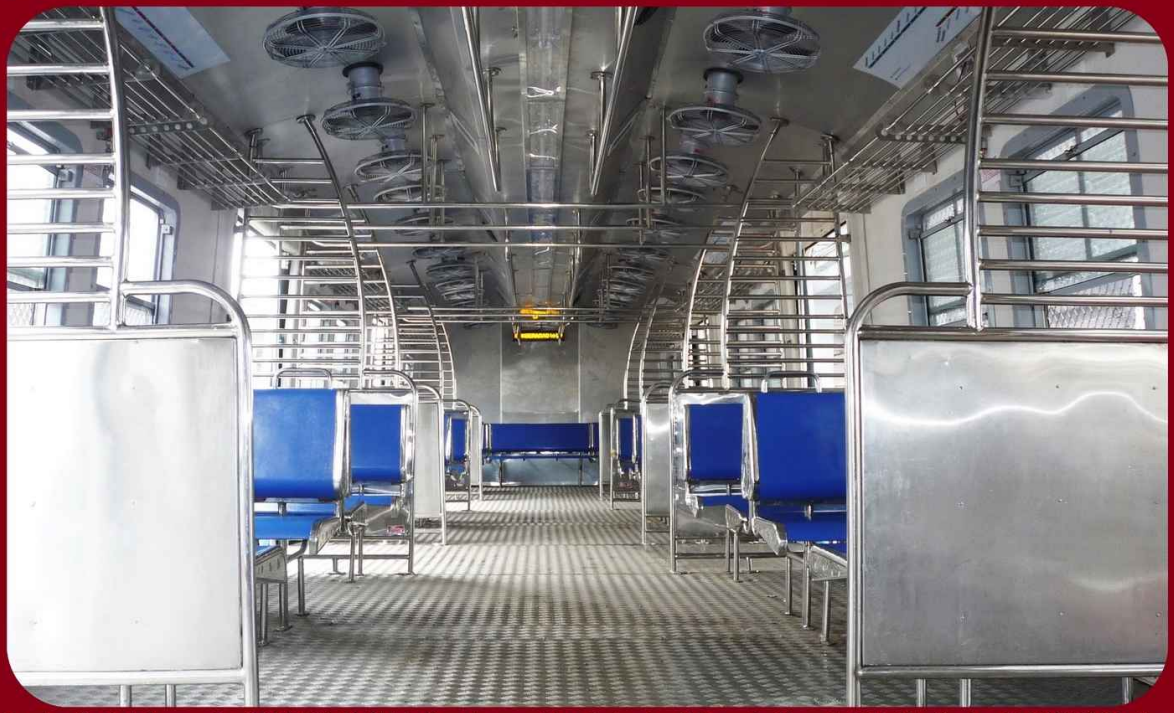


A Falaknuma bound EMU [right] crosses a Lingampally bound EMU [left - at a distance] in the evening on the curve between Secunderabad [up ahead] and Sitaphalmandi [behind the photographer] stations. (27 May 2014)

A Falaknuma bound EMU departs from Sanjeevaiah Park station in the early morning hours. This, along with several other stations, were built just before the inauguration of MMTS services in 2003 and no other trains other than MMTS EMUs have scheduled stops here. (23 December 2014)

A Falaknuma bound EMU rolls into Sitaphalmandi station- the very next station after Secunderabad en route to Falaknuma. Sitaphalmandi, owing to its location on one side of the Secunderabad - Sitaphalmandi - Lallaguda Gate triangle has loop lines on both sides of the main lines and was an extremely busy station [traffic wise] during the MG era. The track on the right was initially not a track fit for MMTS rakes as there was a huge gap in the middle of the platform as the erstwhile ticket counter, discontinued in 2004, was located on the Falaknuma bound platform and that gap with stairs going up onto the platform crossing across the loop line was needed for easy access. (28 December 2014)

A Falaknuma bound EMU takes the curve towards Secunderabad after departing from Begumpet. This curve is part of the Begumpet - Sanjeevaiah - Necklace Road triangle. The remnants of the now defunct Hussain Sagar Jn. station stands to the right of the picture on another leg of the triangle on the Secunderabad - Nampally tracks. (1st June 2014)

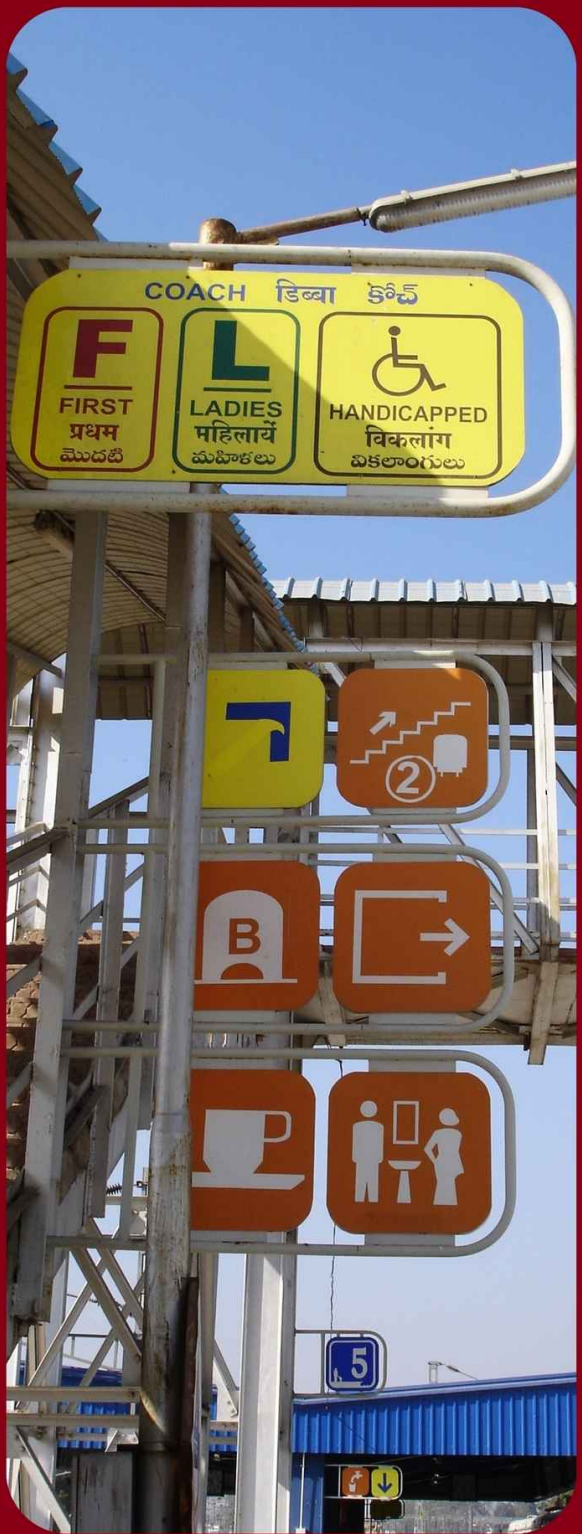


Interior of a IInd class coach of MMTS EMU. This is from the second lot of rakes that SCR received in early 2011. The first lot of MMTS EMU rakes had a slightly different cushioned seating even for the IInd class coaches. (14 July 2011)

Full body advertisements were implemented to garner extra income from the MMTS rakes on and from the last quarter of 2011. Here's one such rake departing from Hafeezpet station. (10 January 2012)

A Lingampally bound service departs the beautiful Necklace Road station next to the Hussain Sagar lake. (11 April 2009)

A service pulls in onto Necklace Road station. The structure on the right is the Park Hotel which was inaugurated on 22 April 2010. (22 October 2013)



Typical signboards at Lingampally denoting all the information and passenger facilities. This was adopted along with the introduction of the MMTS services and every single station sported them.(2 February 2006)

The rejected design and livery of the first prototype for MMTS. ICF designed the other type of windows after this design was rejected by the then Andhra Pradesh Chief Minister, N. Chandra Babu Naidu.

When inaugurated in 2003, the only double discharge platform within the MMTS network was at Lingampally. Strangely, it was given two different numbers for two sides although announcements were made with only one number [naturally].

The wild side of Hyderabad as it was about 10 years ago. A Lingampally bound service turns towards HI-TEC City station. Contrary to popular belief and post 2010 railway records, it is HI-TEC City and not Hitech City. HI-TEC is an acronym and stands for Hyderabad Information Technology and Engineering Consultancy [City]. When inaugurated in 2003, the station was located in the middle of nowhere and was surrounded by boulders and small hillocks.

MMTS had extremely limited services in the afternoon and at Lingampally quite a few rakes used to be stabled before their evening runs. Here's one in the famous platform number 5 cum 6 [two sides of this double discharge platform have two different numbers]. (19 January 2013)

The afternoon service from Falaknuma to Nampally is seen here departing from Khairatabad station. This station existed before the MMTS era and had a loop line between the two tracks which was later removed. (15 May 2013)

A bird's eye view of an MMTS rake standing on a platform at the rain drenched Secunderabad station. (29 May 2013)

If you stop at Jama-i-Osmania station and look towards Secunderabad, you will be able to see the very next station - Arts College at a distance. The two stations are roughly a kilometer apart. If you look closely, you can also spot a part of the velodrome next to the Arts College station.

Necklace Road station is home to a flock of pigeons & they are accustomed to the MMTS EMUs.

One can see the flock of pigeons are not too perturbed at all when MMTS EMUs rolls in onto the platforms.

This undated picture from the pre-9 and 12 coach era shows a 6 car Nampally bound MMTS EMU leaving the James Street station. The Hussain Sagar can be seen in the top left corner. Quite a few stations between Secunderabad to Nampally- from James Street to Necklace Road, abuts the Hussain Sagar lake. The former APSRTC and presently TSRTC Ranigunj I and Ranigunj II bus depot is right next to James Street station.

The Ghost Train

When Paul Mackintosh came calling...

Tapan Pal

It was the short-lived noon of winter and the Passenger train slowly chugged into a wayside station. Suresh, from the window of the coach, appreciated the landscape beyond, with hillocks not very far from the track and the barren land of mid-winter stretched wide till the horizon. From the solitary chaiwallah of the station, he learnt that the train would stop there for around twenty minutes to give right of passage to an Express train of opposite direction.

Suresh did a prompt back on the envelope calculation on the backyard of his brain. Twenty minutes is a long time – too long to conquer a kingdom. The hillocks are so close to the station, just beside the platform-less side of the train that he was sure, he can go to the hillock and come back to the train well before the span of twenty minutes expires. There was a small temple at the base of the hillock that aroused his curiosity. Usually, temples, mostly of Lord Shiva, are made at the top of such hillocks with customary red triangular flags on the top to declare the divinity of the space. A temple at the base of a hillock, so close to a station, is something you do not come across very frequently, Suresh thought.

He got off the train from the platform-less side. There was no fencing around. So being on the terrain it was the vast expanse of Mother Earth, with many of Her landforms stretched around for display, waved terrain, a dried-up rivulet, and the knoll beyond.

Getting near to the knoll, he found that the Temple is of Goddess Kali, the Monokini Goddess of Death and Destruction – the Bengalis are so fond of. It was a small temple and most likely had its daily puja in the morning as the red flowers offered to the Goddess has dried up by now.

Just five minutes have passed of the designated twenty and the signal at a distance is still glowing red; high time to take a quick look at the hillock.

And it was too steep. By the time Suresh reached the middle of it, he saw the world beneath with two caterpillars crossing each other so silently in a curve. He was spellbound by its bewitching natural beauty. It is only after some time it flashed upon his mind that one of the caterpillars is his own train, the Express being the other.

Dusk fall too rapidly in the winter afternoon. The chill in the air could be felt, and all his belongings, including the woollens save the solitary wrapper he is with, were in the departed train.

So, time to get back into the station, and the solitary chaiwallah, by now, had all his tools into a sack, homeward. The platform was deserted, only a tree, flame of the forest, flowered a lot in anticipation of the spring.

The next train is on the following morning, and the station complex has no arrangement for night-staying. The

chai-wallah left for his hamlet, fingering to the horizon as the location of that. The Booking Clerk of the station, by now, has closed the window. He seems to be in a hurry to leave the station for warm comfort of the red coloured two storied cabin some distance away along the track. He hardly had any patience for hearing Suresh and on being asked where to spend the night, showed the concrete bench before the Booking Counter.

It would be wise not to think of food now, though the platform has a tube well at a tip of it. Dusk is settling in, temperature is lowering. The only consolation being he has a shed above his head, and has to spend the night on this bench till the morning train arrives.

The shiny tracks came to the platforms and lost into the horizon, both ways. A rusty diversion of that, covered with lush undergrowth, runs for some distance and end up in an earthen mound. Obviously, that track had not served a loco for decades.

Some Express trains that do not stop at this wayside station will pass in the night. A rustic man in deep blue livery, the solitary representative of the omnipotent rail company, was getting ready with his lamps to show to the passing trains at night. Time has finally come to prepare for a tiring and eventless night, on the concrete bench of the platform, beneath a shed, for the l-o-n-g winter night. Suresh did exactly that. He dozed off to ignominy.

Into his deep slumber, Suresh felt warmth around him. The nocturnal chill has gone, giving way to warmer cozy air, with small water particles in it, as if it is monsoon. He sat up. It is pitch dark everywhere and the crackling of crickets were overpowering. When his ears got somewhat accustomed to the noise, he heard a faint throbbing noise somewhere.

Curiosity brought him up. The sky above is dazzling with stars. There is a faint glow at the base of the Kali Temple, and the red eye of the semaphore signal is glowing.

The track is electrified and Suresh could remember distinctly that all through his journey to this station, as well as in the afternoon, he has seen the signal to be of light. How it got reverted to semaphore?

The throbbing noise got distinct and louder from his left, the source of the noise, a bright beam of light, was unmistakably of a loco. That is getting bigger and bigger with the passage of every moment. What train is coming with so much noise, is it a Goods train?

Express or Goods, it does not make any difference at this wayside station, as none is supposed to stop here. Still, to save him from the dust and dirt that will fly on the platform with the passage of the train, Suresh retreated to the interiors, but an impulse forced him to look at the train.

And he had his spine chilled as the steam hauled train whizzed past. Its loco is a fossilized 4-4-2 Atlantic Class AP. Oh My God ! It is a passenger train, with lots of dimly lit coaches. When Suresh moved 180° to see the rear of the passing train, he was awestruck, the semaphore signal is still red, and the train has taken the diversion amid the undergrowth instead of the 'Main' line. It is whizzing past to the path of no return perhaps. How to make it stop anyway, is there any way?

And an earth-shattering sound came amid darkness; the train must have met its unpleasant destiny, Suresh being the solo witness to it. And what he can do now to help the victims, alone, amid darkness, in this chill night? Nothing, absolutely nothing.

To his rescue, came a 'gorasahib', most likely an Anglo Indian, with stylized beard and a black suit. 'Hey man, it is Paul Mackintosh, Guard of 6 DOWN. Is not it funny to crash a loco?'

The sahib melted, literally, into thin air, and Suresh was scared to backbone. He went to the other tip of the platform. He had lost the perception of time, still, after some time, he felt that the night is ending, this must be the East, as it already started to brighten up.

At the crack of the dawn, the Booking Clerk babu of the station arrived from his nocturnal hangout, the cabin some distance away along the track. He found Suresh dazed, in a stupor, at the tip of the platform. He told the story. Paul Mackintosh was the Guard Sahib of 6 Down Punjab Mail of the East Indian Railway that crashed at the height of the monsoon at about 1.20 am of the 17th July, 1937 at Bihta, about ten miles from Arrah, killing many people. The train was coming to Howrah from Lahore. The 'gorabhoot' as people, who saw it, states that it comes to the station every night – perhaps as the custodian of lives of passengers, he is still to acknowledge the magnitude of the problem, unable to excuse himself. The Kali Temple nearby was established sometime in 1939 to get rid of the spirit, but could not.

But will anyone ever believe the story – that's what Suresh wondered !

All photos collected from Internet open forums.

INDIA

THE NATION WITH GROWING METRO SYSTEMS

Part-II : Metro From the Land of Nizams, Nawabs and the Orange City

Anamitra Bose

The concept of metro-rail gained substantial popularity after the sky-rocketing success of the Kolkata and Delhi Metros. From 2010 onwards, many metro cities felt the pressing need of a mass rapid transit system – preferably in the form of 'Metro'. The powers at the centre (Ministry of Urban Affairs) and the respective states set up various corporations (Special Purpose Vehicle) to survey, design, build and operate metro railway in various nooks and corners of the country. The scenarios of the urban centres were already undergoing sea change with the advent of the Special Economic Zones as the young population craved for a more comfortable and faster transit to their workplaces, the ever-increasing force of the working women longed for a secure and reliable transport system. This particular switchover to a faster lifestyle demanded a swifter commute, far from the hustle and bustle of the traffic snarls that the metros were facing.

The metro railway corporations, who made DMRC (Delhi Metro Rail Corporation) their model, tried to replicate its path and inculcate the work culture in their approach. Delhi Metro had already grown by leaps and bounds and had become one of the busiest metro systems in the world in a decade. Due to various factors though the Kolkata Metro could not attain the same level of excellence and professionalism as an organisation, despite being the first metro system of the country. The new metro systems not only followed DMRC but some of them also hired them as a consultancy agency which helped them with the designs and other aspects. Soon, various cities were in the mix for building their own metros which got operational through

subsequent phases. While some got reasonable response, there are others which became hugely popular but some lagged terribly behind in ridership factor owing to lack of proper planning and unfair fare structure. In this part of the series, I would take the readers on a roller coaster ride across the metro systems of Hyderabad, Lucknow and Nagpur.

:: HYDERABAD METRO ::

The land of Nizams and the present capital of Telangana and its twin City of Secunderabad has an efficient bus service network in place which catered its population to a great extent until the 90s. With the boom in the IT sector and the growth of HiTech City as the new hub of these offices gradually pushed the road traffic into despair. The changed scenario proved to be too much for the bus fleet to handle and in 2003, State Government of the undivided Andhra Pradesh and the South Central Railway joined hands to set up a smart and fast system of transport named 'Multi Modal Transport System' or the MMTS. This system integrated the traditional suburban railway system with the state-operated road transportation to provide a seamless gateway. The EMU service ran in and around Hyderabad providing a fast and dependable service but with passage of time, the MMTS also proved to be inadequate and one-dimensional to meet the needs of the next metropolis in the making. In 2007, the Central Government asked DMRC to carry out a Detailed Project Report (DPR) for Hyderabad Metro which afterwards got sanctioned. The project was to be built in Private Public Partnership method and made it the world's largest PPP project in metro rail sector. In July 2008, the bid was awarded to Maytas Infra Pvt. Ltd. – an indigenous firm, but they failed to come up with any progress till 2009. A re-bidding process was initiated and in 2010, Larsen and Toubro (L&T) won the bid. Accordingly, a Special Purpose Vehicle (SPV) was formed by the name, L & T Metro Rail Hyderabad Limited (LTMRHL) on 4th September, 2010 with an agreement to undertake the project on Design-Built-Finance-Operate-Transfer (DBFOT) basis. Initially, three lines were proposed – Red Line (Miyapur to LB Nagar) with 29 kms

Photo courtesy: Anamitra Bose

Photo courtesy: Somsubhra Das

were proposed – Red Line (Miyapur to LB Nagar) with 29 kms of route length and 27 stations enroute, Blue Line (Nagole to Raidurg) with 28 kms route length dotted with 24 stations and Green Line (JBS to Faluknuma) with 15 km route length and 15 stations.

Working and reworking on the original layout which included changes in route and station positions, the construction was finally taken up in various phases. The Nagole-Ameerpet and Miyapur-Ameerpet sections of Blue and Red line respectively was opened on 29th November, 2017. The other sections of the three corridors were thrown open at various points of time. At present, most of the Phase-1 plan is open for public operations except for the 5.2 km stretch of Green Line from MG Bus Station to Faluknuma which will be constructed in the construction stage 4/2. The whole of Hyderabad Metro system uses Standard Gauge (1.435m) as the gauge system and the trains are powered by 25 KV 50 Hz AC OHE system.

The Signalling system used by LTMRHL is CBTC signalling system supplied by Thales, known as SelTrac. The system supports Automatic Train Operation (ATO) and Automatic Train Protection (ATP) system. The entire control system will eventually be migrated to the Unattended Train Operation (UTO).

The phase-2 of the Hyderabad Metro is proposed to be taken up solely by Government of Telengana, instead of the PPP model followed in the Phase-1. Two new lines are proposed in the Phase-2 – Line 4 (31 km) from Raidurg to RGI Airport and Line 5 (22 km) from Lakdi ka Pul to BHEL. The Blue Line is also proposed to be extended by 5 km from Nagole to LB Nagar. The Raidurg to Shamshabad RGI Airport stretch will be known as Hyderabad Metro Express and will provide a seamless connectivity to the airport from main city area.

Rakes used by LTMRHL:

The rakes used by Hyderabad Metro are manufactured by Hyundai Rotem at its Changwon Factory in South Korea. In 2012, a ₹ 18 billion dollar contract was awarded by LTMRHL to Hyundai Rotem for supplying 57 rakes consisting of 171 coaches for Hyderabad Metro. The first rake was turned out

turned out from Changwon plant on 10th April, 2014 and it reached its new home at Hyderabad in May, 2014. From December that year, the rakes were undertaken for trials in ATO mode. The rakes are now homed at Miyapur and Uppal Road Depots where they undergo daily maintenance and scheduled overhaul works. The Hyundai Rotem rakes are 3-coach rakes with formation of DMC-TC-DMC where DMC is the Driving Motor Coach and TC is the Trailer Coach. They are extendable to 6-coach formations with DMC-TC-MC-MC-TC-DMC formation where MC is non-driving motor coach.

- **Bogies :** A bogie is a H-shaped structure that supports tractive system, braking system, motor, suspension system etc. Each bogie consists of two axles and four wheels. The bogies used by the ROTEM rakes are Bolster-less H-transom bogies.
- **Shell :** The rakes' shell are made up of light-weight stainless steel.
- **Suspension:** The primary suspension is provided by conical rubber springs while the secondary suspension is provided by air springs.
- **Propulsion :** The propulsion system of these rakes are provided by Mitsubishi Electric Company (MELCO), a sub-contractor of Hyundai Rotem. The propulsion is the state-of-the-art IGBT based 3-phase VVVF propulsion system. The propulsion is energy efficient and supports regenerative braking.
- **Braking :** The Rotem rakes have 5 types of braking options used in various forms:

  A) Electro-Pneumatic Friction Brake system
  B) Electric Regenerative Brake system
  C) Spring applied air release parking brake
  D) Friction emergency brake
  E) BP controlled back up braking system

The rakes use a blending of Electro Dynamic Regenerative braking and Electro-Pneumatic braking system depending on the speed at which the rake is moving. The blending is done on demand by calculating braking demanded and dynamic

Photo courtesy: Anamitra Bose

Photo courtesy: Somsubhra Das

brake performance. It provides for Regenerative braking from 85 kmph to 1 kmph, i.e., when the brakes are applied by a train moving at a speed of 85 kmph and Pneumatic braking from 7 kmph to 0 kmph, i.e., when the speed is not above 7 kmph. The braking is controlled by BECU (Brake Electronic Control Unit). Each car has one BECU per bogie.

- **Control system :** The Hyundai Rotem rakes use Train Integrated Management System (TIMS) for control and management of the rakes throughout its length. TIMS provides control, monitoring, diagnostic and reporting of train-borne equipment through redundant manner. It controls and diagnoses the equipments through the Train Bus (ARCNET) and the Local Bus (RS-485).

The subsystems of the train use microprocessor-based control for onboard diagnosis of faults in the rakes. The subsystems are interlinked via a communication data bus for fault monitoring and data logging.

- **Couplers :** The couplers on two ends of the train are automatic coupler having mechanical and pneumatic connection. The connections between two basic units are semi-permanent couplers.

:: LUCKNOW METRO ::

From the Land of Nizams, we now shift our focus to the Land of Nawabs as we take a sneak peek into the Lucknow Metro. The Lucknow Metro is the first metro rapid transit system to be built in a Tier-2 city. The metro system is designed, constructed, operated and maintained by the Uttar Pradesh Metro Railway Corporation, previously known as Lucknow Metro Rail Corporation (LMRC). The Lucknow metro is a very advanced and modern solution to the city's traffic woes and narrow road spaces. At present, this North-South corridor of metro operates in 22.87 kms.

In 2013, an SPV called LMRC was formed by the Government of Uttar Pradesh to start construction of the Lucknow Metro. The foundation stone was laid in March 2014 and construction began in September that year. The Phase-1 of Lucknow Metro initially had two lines – Red Line and Blue Line. The Red line (North South Corridor) from Munshi Pulia

Photo courtesy: Somsubhra Das

Photo courtesy: Somsubhra Das

to CCS International Airport is 22.87 km long out of which 19 km was proposed to be elevated in two sections and 3 km underground tunnel to link the two sections. The Blue Line was planned from Rajajipuram to Hahnemann via Gomti Nagar, Hazratganj and Patrakarpuram. The two lines were proposed to interchange at Gomti Nagar. However, the alignment was later changed from Vasant Kunj to Charbagh and distance was reduced to 13 kms from 14 kms.

In 2017, the first stage of Red line was inaugurated from Transport Nagar to Charbagh. After gradual progress, the entire NS corridor was inaugurated in 2019. On this route, Hazratganj, Sachivalaya and Hussain Ganj stations are underground while the rest are elevated. The construction of Blue line is yet to begin.

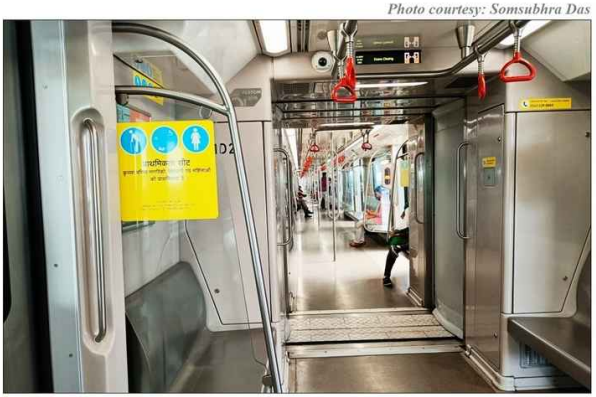
The LMRC used 1435 mm Standard Gauge as its gauge system and 25 KV 50 Hz AC OHE as its catenary arrangement. The signalling system used by Lucknow Metro is the state-of-the-art Communication Based Train Control (CBTC) signalling system URBALIS 400 supplied by Alstom. The CBTC is integrated with Automatic Train Protection to apply auto brakes in case of emergency. The Auto Train Supervision system is also deployed to manage train operations efficiently through auto route setting and automatic train regulations which monitors the operations continuously.

Rakes used by Lucknow Metro :

In 2015, LMRC awarded a Rs. 1012 crore contract to supply 20 four-car trainsets to Alstom. The rakes were to be used in Phase-1A. Lucknow Metro chose Alstom's Metropolis rake to be used. All the raked were manufactured at Alstom's facility at Sri City, Andhra Pradesh.

- **Design :** The design of the rakes is inspired by the spirit and the rich cultural heritage of the City of Nawabs. The front face resembles the beautiful Roomi Gate, Bada-Imambara and Asifi Mosque. The blending of red and black colours in the front face is reflection of the modern Hazratganj. The yellow stripes on the paintless shell of the coaches are designed resembling renowned *Chikankari* art of Lucknow.
- **Propulsion :** The modern propulsion system of these rakes are hosted by ONIX or OPTONIX Variable Voltage Variable Frequency (VVVF) drive which is based on IGBT devices. This propulsion system drives the three phase AC asynchronous traction motors in the motor cars. The propulsion system is very energy efficient and helps in quick acceleration and deceleration of the rakes.
- **Braking :** The rakes have the provision for both electro pneumatic and electrical dynamic braking. The electrical dynamic, i.e., regenerative braking is blended with pneumatic braking to achieve the required braking effort. Regenerative braking also helps to regenerate electricity while braking and thus reducing the total energy consumed by the rake.
- **Control system :** Each metropolis trainset features a train-borne Ethernet based control system , providing resilient broadband backbone for the security subsystems and controlling passenger announcement system, door closing and opening etc. The whole control system is done through train bus and known as Train Control and Management System (TCMS). The system is compatible with TrainTracer tool for remote monitoring of the rakes from OCC and depots. The interior is provided with CCTVs and electronic display boards for more passenger amenities.

Photo courtesy: Somsubhra Das



:: NAGPUR METRO ::

The orange City of Nagpur was the second city in Maharashtra where a metro railway was proposed. In 2012, the proposal for Nagpur Metro was raised when cities having population more than 20 lakh were made eligible to have a metro railway. In November that year, Nagpur Improvement Trust (NIT) agreed with DMRC to prepare a DPR on the feasibility of metro railway in Nagpur. Accordingly, an SPV was setup by the Government of India and the Government of Maharashtra, known as Nagpur Metro Rail Corporation Ltd. (NMRCL) which was later renamed as Maharashtra Metro Railway Corporation Ltd. or the MAHA METRO.

According to the DPR submitted by DMRC, two corridors were proposed across the city. The Line 1 or the Orange line was the North South alignment which was proposed from Automotive Square to MIHAN while the Line 2 or the Aqua line was the East West one which was planned from Prajapati Nagar to Lokmanya Nagar. The two lines would have Munje Square as the interchange point. The north-south corridor will have a short distance of 3.3 km as underground alignment after the old Airport station. The underground section will have a station named New Airport. After that, the line would again be elevated and reach MIHAN area.

After joint inspection by NIT, DMRC and MADC, it was decided to go elevated following a 24-metre-wide road along the London Street from Sahakar Nagar upto Wardha Road intersection. Then the alignment would be on the Wardha Road upto intersection with Airport Road. From there, it would proceed to the MIHAN depot. This was done to avoid the huge costs involved in underground metro alignment and to make the Financial Internal Rate of Return (FIRR) at least 8% of the total project cost.

During construction, it came to the fore that at both the intersections of the 24-metre-wide road with Sahakar Nagar and Wardha Road there were a good number of properties which needed to be demolished which would in turn take up a lot of time. So, it was decided to again realign the corridor along Wardha Road from Congress Nagar Railway station upto Railway-over bridge near CONCOR depot. After crossing the intersection point of Wardha Road and Airport Road, the alignment was proposed to be shifted to MIHAN area and the alignment at this portion of corridor would be at grade and to run parallel to Wardha Road before proceeding to the car depot. The Maharashtra Airport Development Company (MADC) land of 73 Ha was available on the west side of the railway line and south of the existing flyover near the existing station which would be utilised for the depot.

Photo courtesy: Somsubhra Das

A serious deadlock also stalled the progress of East-West line construction. The original alignment of East-West metro would pass through the same place where the Ramjhula Phase-2 was under construction. This led to a serious conflict between the Maharashtra State Road Development Corporation and MahaMetro. After intervention of the Nagpur Bench of the Hon'ble Bombay High Court and the Chief Minister himself, both came to an agreement that MahaMetro will lay tracks between the two spans of Ramjhula and this alignment would eventually save the Indira Gandhi Government Medical College and Hospital from demolition.

At present, the 15.6 km long section between Kasturchand Park to Khapri section of the North-South corridor and 11

Photo courtesy: Somsubhra Das

Photo courtesy: Somsubhra Das

Photo courtesy: Somsubhra Das

Photo courtesy: Somsubhra Das

km long Sitabuldi to Lokmanya Nagar of East-West line is operational. The two lines have an interchange at Sitabuldi. The tracks are 1435 mm wide Standard Gauge tracks and catenary system is 25 KV 50Hz OHE.

The signalling system on the MahaMetro is CBTC signalling system supplied by Siemens. Siemens supplied its 'Train Guard MT' application for running Automatic Train Operation (ATO), Automatic Train Protection (ATP) and Automatic Train Stop (ATS) functionalities. The system is upgradable to Unattended Train Operations (UTO) for future use.

Rakes used in MahaMetro :

In October 2016, NMRCL or MahaMetro signed a contract with China's state-owned CRRC Dalian Corporation to supply 23 trainsets with 3 coaches each, i.e., a total of 69 coaches for both the Orange and the Aqua lines. But in 2017, Nagpur Metro was in urgent need of rakes to carry on trials from MIHAN depot to Airport station. Dalian was yet to deliver any of its rakes to MahaMetro by then. To solve this issue, Nagpur Metro leased two 3-car rakes from LTHMRL, Hyderabad Metro to start immediate trial runs. 3-coach rakes from Hyundai Rotem were brought to MIHAN depot and trial runs were started with them. The rakes received speed certifications upto 25 kmph from RDSO during trial runs and later at its full potential. Also, the first section from Sitabuldi to Khapri was inaugurated in March 2019 using a Hyundai Rotem rake. The first three-coach made by CRRC Dalian reached the depot in November 2018. But the rake received the clearance for running in November 2019 only.

Presently, all the coaches now have been delivered to Nagpur Metro by CRRC Dalian and MahaMetro has returned the two Hyundai Rotem rakes to Hyderabad Metro. The CRRC Dalian rakes are 3-coach trainsets with formation DMC-TC-DMC, i.e., two Driving Motor Cars and one Trailer Car. The powering percentage is 67%.

- **Propulsion :** The propulsion is defined by IGBT-based VVVF drive, which powers the 3-Phase traction motors in the rakes. The use of IGBT makes acceleration faster and also more energy is saved.
- **Braking :** The service braking in the rakes is achieved by the blending of electric Regenerative braking and electro-pneumatic braking. The regenerative braking is used as the main braking system so that maximum energy can be regenerated and sent back to the OHE thereby making optimal utilization of the 3-Phase technology. The speed sensors and anti-skid system is also integrated to prevent any skid during braking. The brake actuator decides which brake equipment to apply – tread braking or wheel disc brakes. Apart from these, there are emergency brakes and spring applied parking brakes.
- **Control:** The entire train is connected through a common Multifunctional Vehicle Bus (MVB) and controls traction, braking, cooling, passenger announcement, through Ethernet based TCMS.
- **Bogies :** The bogies used are Bolster-less fabricated bogies for reducing the total weight and also minimising the vibrations. The primary suspension system used is rubber spring and the secondary one is provided by air suspension. These help to reduce the lateral vibrations in the coach while curving.

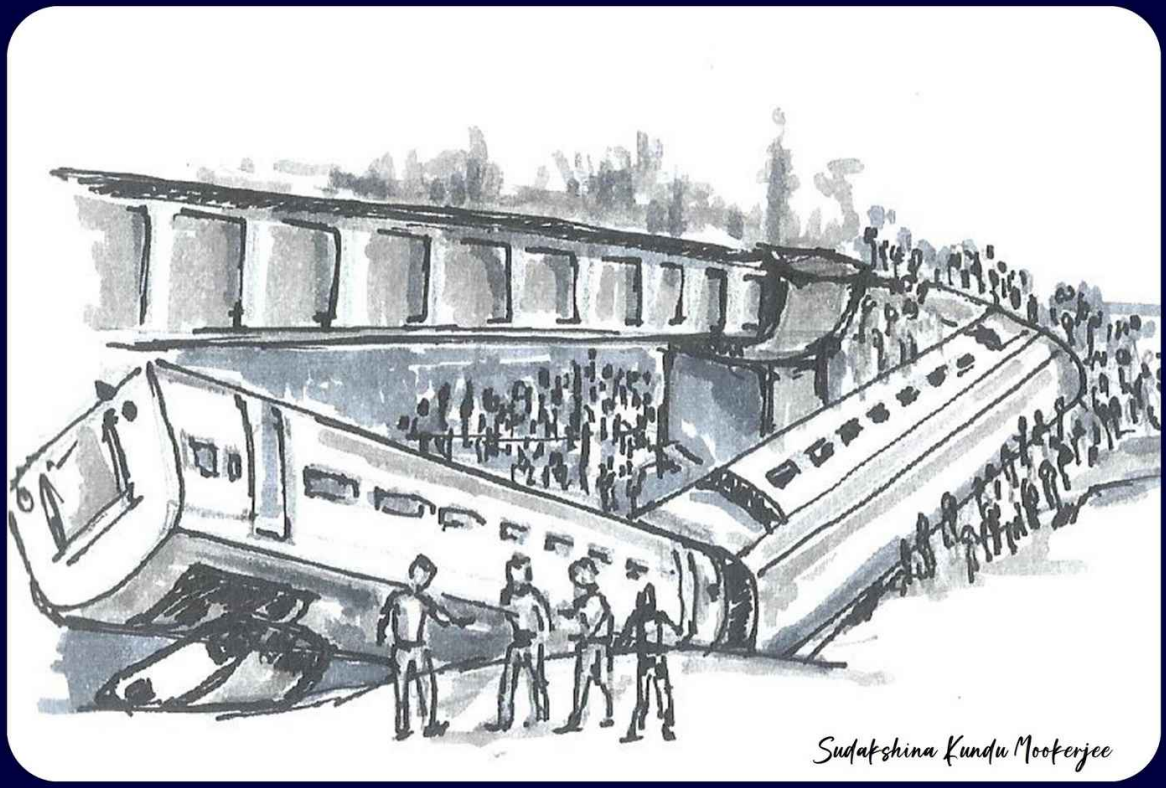
The metro systems of Hyderabad, Lucknow and Nagpur have one thing common between them – the gauge, i.e., the standard gauge and the traction supply mode of 25KV AC 50 Hz OHE arrangement. All the three metro systems are extremely modern and have the capacity for emerging as the most dependable transport medium in their respective cities, if not already. The pace of work and proactiveness as demonstrated by the stakeholders to iron out the initial hiccups and to throw open the system for public is a testimony of professionalism and intent which has rubbed off on the other transport systems in our country.

In the next part, we will focus on the metros from the Detroit of India, the Queen of the Arabian Sea and the Silicon Valley of India.

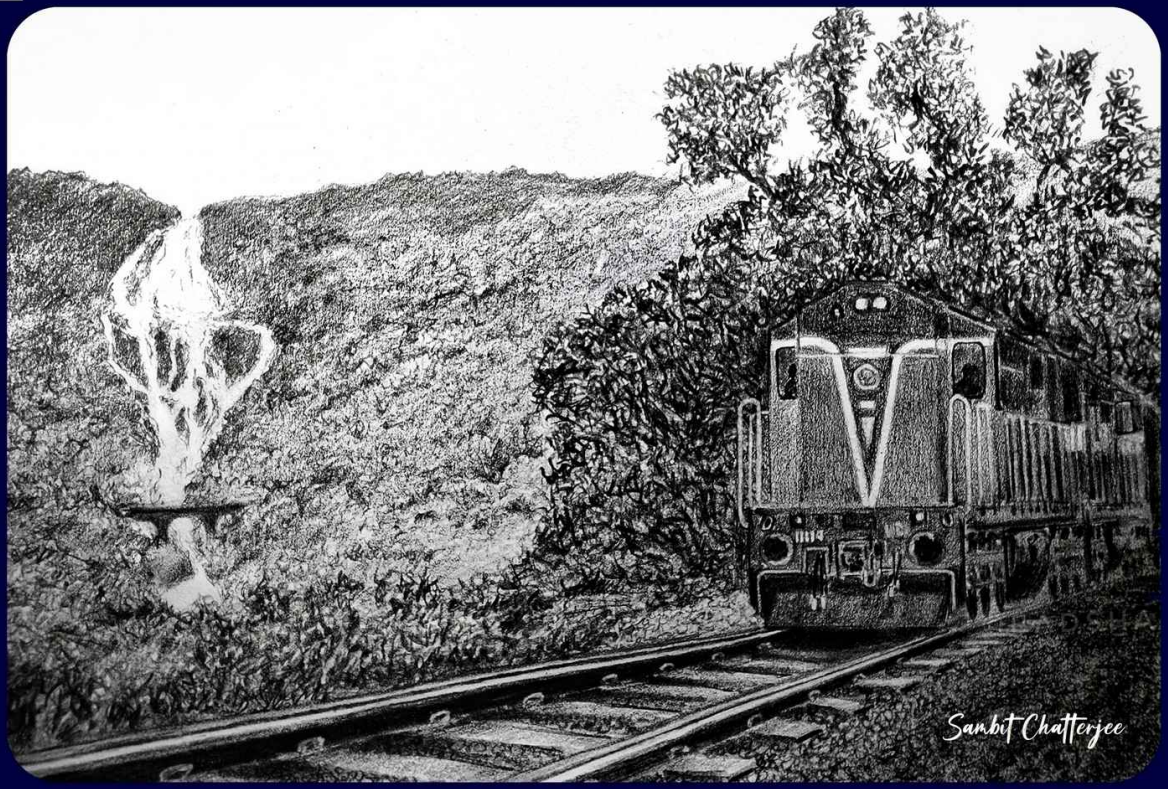
Cover photo coutesy: Arkopal Sarkar, Anamitra Bose, Rudranil Roy Chowdhury, Aishik Bhattacharya & Metro Mania Blog.

Railway Sketches

Sudakshina Kundu Mookerjee



Sudakshina Kundu Mookerjee


Sambit Chatterjee


WAP7
37116
ER
© BADSHA
Sambit Chatterjee


Sudakshina Kundu Mookerjee


Sudakshina Kundu Mookerjee

Myths vs Truths of Calcutta Tramways

Dr. Debasish Bhattacharyya

Historically speaking, the electric-operated tramways was the first reliable and affordable public transport replacing the horse drawn carriages in innumerable cities and towns across the globe starting around 1900. Steam locomotives, however, continued to connect across the continents as petrol buses and the hybrid mode trolley buses appeared later. Cities and towns were compact, thus efficient public transports always satisfied the needs of citizens.

In USA, the giant automobile 'Fords' interfered this social structure in around 1920s. They were able to convince politicians to create settlements in a scattered way so that public transport cannot penetrate everywhere and people were forced to depend on private vehicles. As a result, cities after cities discontinued the tramways and also bus services to obligate the automobile industries. European countries and the communist blocks, in contrast, largely retained their tramways and public transports as they did not succumb to the automobile lobbies.

Over the years it was observed that the cities who retained the tramways, in particular, offered much better quality of urban life than the car-oriented societies. Decongestion of roads, reduction of environmental costs and road accidents, comfortable and reliable services, reduction of societal inequalities in terms of affordability were clearly visible in cities that maintain the tramways. The people who were psychologically infected from personal car owning theory became minority. That's why the growth of tramways in the world in recent years is phenomenological. Currently, over 450 cities in the world offer tram service to the citizens as an attractive mode of public transport. A peep into internet produces the desired list of such cities.

Obviously, the automobile lobbies never like this. They create many misconceptions about tramways and are able to propagate those using media coverage as an advertisement or distorted news supported by politicians in power. Countries where awareness and civic sense of the citizens are high, tramways run uninterruptedly. Unfortunately, in India especially in Calcutta, literate citizens, act as illiterates and are indifferent of their surroundings.

This advantage has been fully utilized by the authorities to float misconception about its own tramways so that cars and auto-rickshaws could get a supreme dominance in city life. Some of the misconceptions that have been widely spread among car loving people have been addressed here :

Three trams stranded for one unruly goods vehicle but still trams causes jams... Seriously!!!!!

Reserved tracks for trams like in Maidan is ideal for punctual and quick tram operations...

Myth No. 1 - Trams are Slow

The Truth: Rail based cars cannot accelerate or decelerate like vehicular traffic because of lesser frictional force exerted on the iron wheels. That's why reserved tracks are the rule of any tramway. De-reservation of the tracks all over the city followed by illegal occupancy of tram tracks by automobiles cause slower movement of trams as compared to earlier days. In spite of that, average speed of a tram in Calcutta is very similar to any other vehicle plying in the center of the city.

Myth No. 2 - Trams are the Main Reason of Traffic Congestion across Kolkata

The Truth: This statement is an absolute hoax. Even Kolkata Traffic Police, who are always against the tramways, has withdrawn such allegations at present. Once someone verifies the speed of a vehicle on a road with or without tram services, the truth will be revealed. The fact remains, one of the major reasons based on which trams have comeback across the world is decongestion of roads. Decongestion is the general advantage of any mass transport against dependence on private vehicles because of much less road occupancy/passenger and free from parking problems.

Myth No. 3 - Kolkata Roads are Narrow for Trams to Run

The Truth: Trams are most appropriate when the roads are narrow and density of population is high. Many cities have earmarked roads as 'Tram Only' to maximize safe movement of the commuters and pedestrians. Such steps of debarring private vehicles have unbelievably improved the quality of regional areas in older cities where civic architectures do not allow creation of car parking spaces. Needless to mention about the environmental benefits created thereof.

Myth No. 4 - Maneuverability of trams is zero

The Truth: Yes, concept of modern public transport demands free way to trams and buses and must not be amalgamated with vehicular traffic to ensure speed and punctuality. Dedicated tracks and priority of trams at intersections are the fundamental rules of operating tramcars.

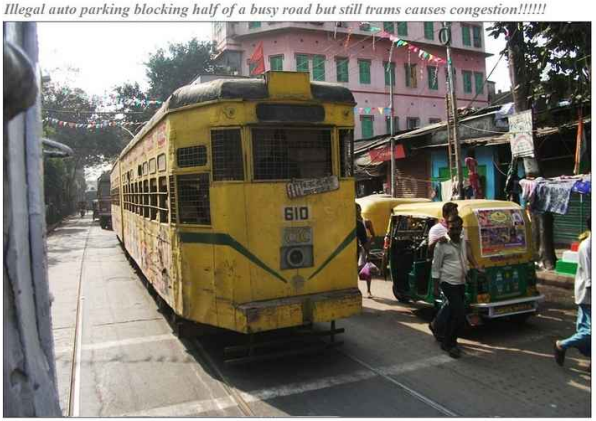
Myth No. 5 - Metro Rail is the Advanced and Faster Version of Trams, hence Trams are Useless

The Truth: Metro rail and trams are not competitors rather, they supplement each other. Metro rail is a high-capacity corridor service while tramways form a densely waved network. There are huge stretches of area where metro service is not available or possible. Often, availing of metro service is difficult for many citizens for various reasons. Further, for medium to short distance travels, the speed of the vehicle is not a deterring factor.

Myth No. 6 - Auto-rickshaws Move More Swiftly and Transport People More Efficiently

The Truth: Auto-rickshaws of Kolkata are moving demonstration of lawlessness and uncivilized character of the city. Ideally, like other Indian metropolis, auto-rickshaws should replace taxies and not trams and buses. Except in routes where large vehicles could not operate, ferrying commuters from point to point on a share basis proves callousness of the transport department in not providing proper city transports. Easy maneuverability is a major reason of accidents of auto-rickshaws, the number of which is never exposed to the citizens. They disobey all safety rules and regulations in broad day light. The number of illegally operated three wheelers is uncountable.

Illegal auto parking blocking half of a busy road but still trams causes congestion!!!!!!



Sheer act of callousness!!! But if accident happens tram lines are only to be blamed.

Myth No. 7 - Tram Lines in Middle of the Road are Hazardous for Two-wheelers and Often Creates Fatal Accidents

The Truth: The picture above tells the actual story. In the driving guidelines, there are specific instructions for negotiation of tram tracks by two and three wheelers, especially when the road is wet. Such light vehicles should not run parallel to tram tracks to avoid slippage. Rather they should cross the tracks vertically at 90^0 angle or closer to that. Competent authority may emboss anti-skid strips along the curvatures of tram tracks as a safe guard. Among innumerable road accidents suffered by two wheelers, involvement of tram tracks is infinitely small.

Myth No. 8 - Electric Buses Serve the Same Purpose as Trams and They are the Future

The Truth: Nobody can justify demolition of an existing tramway system by e-buses unless corruptions and vested interests are accounted for. Compared to 50–70 years of service life of trams, life of e-buses is unknown; may be 5-6 years. These buses are very expensive, especially the batteries. Energy efficiency of batteries is also low. Nobody knows their durability. Overall, operational and running costs of e-buses are very high leading to higher fare structures. Lithium being unavailable in India, all such batteries are imported. There is no guideline for disposal of highly toxic lithium-ion batteries of the buses, at least in India. A tramway is free from all these curses. An e-bus may replace a diesel bus but certainly cannot an existing tramway. In Germany, for example, expired lithium batteries are dumped in African countries.

Myth No. 9 - People do not board Trams, They Run Empty, Even During the Office Hours

The True: This is the ultimate game plan of WBTC to prove that trams are rejected by the commuters justifying its abolition and consequently, sale of the depots to land sharks. In the last three decades, the functioning of Calcutta Tramways has been accurately designed by paid employees in such a way that the commuters cannot use this service. Kolkata Traffic Police and the Municipal Corporation fill up

An otherwise full double-car Tram plying during odd hours on a Friday afternoon...

orchestra of apathy towards trams. Closure of popular tram routes in one pretext or another, closure of services from passenger generating points, truncation of route lengths for arbitrary reasons, reduction of fleet strength to a minimum, freezing of recruitment of essential manpower, abolition of time table of operation, running of trams back to back, de-reservation of tram tracks and abolition of safe boarding and de-boarding systems, suspension of tram services by traffic police when demand is maximum (e.g. Durga Puja) – are some among hundreds of reasons why commuters are compelled to depend on alternate modes of transport avoiding trams.

Myth No. 10 - Trams Run in Huge Loss, so No Use for Making it a Daily Public Transport Service

The Truth: Once blamed for super profit by the British administrators, the unprofessional character of WBTC, under the transport department, is fully responsible for the unmatched demand of subsidy for Calcutta Tramways. No attempts were made to raise the ridership of the tramways in the last three decades. Profitable routes have been deliberately closed; the benefits are enjoyed by auto-rickshaw unions and others. WBTC has spent money but not for the welfare of the tramways. The loss of revenue has justified the authority to sale depot lands to real estate promoters. The rest is understandable to all.

Myth No. 11 - Why did more Developed cities in India like Mumbai, Chennai and Delhi, got rid of their Tramways?

The Truth: First of all, by which yard stick these cities are marked as developed? It was a global phenomenon that in 1950-60s, many cities of the world, but not all, discontinued tram services assuming that diesel buses were more flexible and cheaper. In 1970-80s, it was acknowledged that this concept was wrong. Many cities have already experienced this expensive mistake while reinstalling tram lines that were once dismantled.

Myth No. 12 - The Kolkata Tramways is a Huge burden for the WB Government but they still kept it as a 'Heritage' Icon of the city

The Truth: Urban transport planners and experts have

identified tramways as the grade A+ public transport system. Since in Calcutta, tramways are in operation over 100 years, the heritage value of this tramway is a bonus to the citizens. In fact, Calcutta tramways qualify for UNESCO world heritage status. That does not mean, winding up the system leaving one or two routes alive. One should distinguish between horse drawn hackney carriages or 'Palkis' and the tramways. The latter is a utility based essential city service.

Myth No. 13 - Trams Should be Abolished from the Roads of Kolkata and Placed in Museum

The Truth: Historic tramcars after restoring functionalities should be preserved in museums and should participate in parades during festivals as done in overseas countries and railways. Modern tramcars should ply all over the city along the existing and of course, extended networks. It is a sustainable mode of transport causing minimum carbon foot print per passenger next to cyclists and pedestrians.

Myth No. 14 - Kolkata Needs More Flyovers for Seamless Traffic Flow, Rather than a Tramway

The Truth: Creation of such facilities is a trap of the vicious cycle – more flyovers and parking spaces lead to encouragement of car ownership – that demands more flyovers and parking spaces – and the cycle goes on and on. Only a sustainable public transport system can break the chain.

Myth No. 15 - Trams Run Nowhere in the World

The Truth: The information is available over the internet that shows at present, trams operate in 456 cities across the world, in all continents irrespective of their economic status (see *List of trams and light rail transit systems* – Wikipedia).

Myth No. 16 - Trams are the Reason for Weak Bridges

The Truth: Back in 1907, the city had bridges suitable for tramway operations. In 2021, we have no knowledge to support bridges for tramway operation, though the same bridges can carry overloaded trucks at reckless speed. Bridges are integral part of any city. So, the question is more of an honest administration than anything else.

Trams around the world - in busy streets, narrow lanes, over the bridges etc.

Myth No. 17 - Modernization of Trams is Costlier Than Installing New Metro Railway

The Truth: The fundamental reason why tramways or Light Railway Transits are reemerging globally is its economic success that includes much lesser initial investment than metro railways along with low operational and running costs. Since in Calcutta, all infrastructures of the tramways do exist, its modernization requires only a small fraction of fund that is consumed by any metro line construction.

Myth No. 18 - Reserved Tracks Can't be Reintroduced as the Automobile Count is Higher Now and the Govt. won't try to Reduce Them, Instead it would be Wise to Close Down the Tramways

The Truth: No matter in which class does someone belong – pro or anti tram lobby, everyone complains of air and noise pollution of the city, pathetic traffic congestion and road accidents. In other words, everyone is unhappy under the prevailing situation except the automobile lobbies and their agents in disguise. Being indifferent about public transports especially of tramways, is certainly an anti-people outlook.

Myth No. 19 - The Overhead Wires of the Tramway are Dangerous

The Truth: Nowhere in the world, are citizens concerned about the safety of the overhead electrical wires of tramways. Unless the authority stops maintenance of the wires and the supports, there remains no possibility of electrocution. In case the live wire is torn and touches the ground, immediately it is stripped off automatically.

Myth No. 20 - Tram Fares are Non-refundable

The Truth: This is an administrative fault that sometimes repels poor people to board a tram. According to consumer protection acts, if the service is stopped for more than a specified time, fare should be refunded or the tickets should be revalidated. Indifferent and callous attitudes of the authorities are responsible for this.

The points that have been raised above are not all inclusive. Many silly points are raised from time to time to defame the tramways for vested interest. Hence, some myth busters are pointed out for readers to realize and decide the role of West Bengal government along with Kolkata Traffic Police, Transport Dept. and some ill-headed employees of Tramway itself, in bringing the down an entire working tram network to a nullity for the sake of reasons best known to the administrators.

All photographs of Kolkata trams taken by Rudranil Roy Chowdhury.
World Trams Photo courtesy:
Brussels and Amsterdam Trams photo courtesy: Asit Baran Das
Toronto and Lisbon Trams photo courtesy: www.spacing.ca

TRAMWAYS BICYCLES SOLAR PANELS

RECOGNISING SUSTAINABLE MOBILITY AND COEXISTING WITH NATURE

SATURDAY, 24TH DECEMBER 2022
MAHAJATI SADAN AUDITORIUM

CTUA

SWITCH ON FOUNDATION 15 years

A Symposium for Advocating Tramways in Kolkata

a report by Team TrainTrackers

Calcutta Tram User's Association (CTUA) in collaboration with SwitchON Foundation organized a seminar on the 24th December, 2022 at the annex building of the Mahajati Sadan based on 'Recognising Sustainable Mobility and co-existing with Nature' to promote green transportation and awareness to reduce overall carbon footprint. It was an initiative on sustainable transport policy for Kolkata with a special emphasis on the Tramways of Calcutta which will complete its 150th anniversary in 2023. Eminent speakers who are luminaries in their respective fields condemned the present state of affairs of traffic in the city and spoke strongly in favour of restoration of the glorious functionality of tramways that once formed a dense and effective network within the city limits.

The symposium was inaugurated by paying homage to Rabindranath Tagore who had cautioned the world about protecting of the environment back in the early days of the twentieth century. Mr. GM Kapur from INTACH (Kolkata chapter) in his inaugural speech pressed upon the fact of the rare phenomenon of functionality of an active tram system for 142 years which makes Calcutta Tramways Company (CTC) a living industrial heritage and added that the city will lose its identity if tramway gets wiped out from the streets. However, he cautioned that preservation of this heritage does not deter it from its modernization as happened elsewhere in the world. Such an apprehension is natural as the transport department of the state is hell bent on presenting trams as an heirloom item rather than exploring its true potential as a mass transport system.

Md. Salim, Secretary of the WB State Committee, Communist Party of India and an ex-Parliamentarian, in his speech mentioned the unholy nexus between the land sharks and the Transport Department that results in sale of tram depot lands in piecemeal. He correctly highlighted that CTC is being throttled to death by the three-mouth dragon – WBTC in disguise of the Transport Dept., Calcutta Municipal Corporation and the City Traffic Police.

The presence of Mr. Debasish Kumar, MMIC, KMC, created excitement among the audience as he was the only person representing the Govt. Though he spoke in favour of tramways in a rather obscure language among the

pro-tram activists, he blamed the earlier Left front government for commencement of the downhill journey of the century old CTC. He left immediately after his deliberation leaving no scope to ponder over the views of the government regarding restoration of Tramways to its earlier glory.

It was the first time ever that an ex-Works Manager of Nonapukur Workshop under CTC expressed his grouse in an open forum. Mr. S S Ghosh, said that the expert committees constituted by the Transport Department for review of the tramways always carried preconceived ideas supplemented by ominous agencies. These committees never explored the hidden potency of the workshop that offered unbelievable craftsmanship in manufacturing and refurbishing tramcars. Unwanted and detrimental interference of these highly placed people has caused irreversible damage to this organization.

Dr. Anumita Roy Chowdhury, Executive Director at Centre for Science and Environment, New Delhi offered key note address. She was critical about land usage policy of the city. She added that huge volume of road space and parking space is occupied by private vehicles that have minimal commuter ferrying capacity. Thus, it is ridiculous to blame trams for traffic congestion as these electric vehicles have very high capacity and never parked on roads. In her opinion, the city is blessed with an intricate network of tramways that every city aspires now.

Prof. Bhargab Maitra, Civil Engineering Department, IIT-Kharagpur is particularly aware of safety of passengers. He asked if the substitutes for tramcars like the two wheelers and three wheelers safe for the citizens. Everyday some 400 people die across India in road accidents while in railways, the corresponding figure is much less. A tramway is the safest, cheapest and most comfortable public transport that is recognized by the rest of the world.

Dr. Debasish Bhattacharyya, President, CTUA elaborated the shocking condition of Calcutta Trams prevailing at present and complete indifferent attitude of the authority to streamline the functioning of this well-established corporation. Money required to modernize CTC is a peanut compared to the monumental costs involved in the construction of metro railways. He demonstrated that CTC has an already existing network woven in the city while the metro railways serve at corridors only leaving a huge volume of commuters unattended.

Dr. Arup Halder, consultant pulmonologist, attached to the Woodlands Multispeciality Hospital Private Limited (WMHL), Kolkata expressed his concern about the widespread chest and lung diseases among citizens that are caused from pollutions of transport sector. According to him, it is not only the tailpipe emission, superfine particles released from tyres and brake shoes seriously contribute to the said diseases. He continued that we are already in red zone and environment-friendly transports like trams can only save us from the grave situation around. His concern was supported by other speakers in terms of Air Quality Index (AQI) of Kolkata which makes the city the second most polluted one in the world. Uncontrolled growth of vehicular traffic along with simultaneous closure of tram routes has helped the city achieve this dubious feat.

In sustainable mobility, pedestrians and cyclists stand ahead of any energy consuming transports. In Kolkata, these two sectors are most neglected. While there is no civic body to advocate for the pedestrians, Mr. Satanjib Gupta, Bicycle Mayor of Kolkata, emphasized the roles of bicycles in economy and mobility of people without hindrance. He regretted that traffic police, who are the most-exposed species to air pollution and are worst sufferers, always act against the cyclists, while in abroad, the situation is just opposite.

Mr. Soumendra Mohon Ghosh, an alternative energy expert, proposed usage of solar energy to run tramcars as it has been done successfully in Melbourne. He also regretted about indifferent attitude of the Transport Department in this aspect.

Mr. Jayanta Basu, specialized environmental and climate correspondent of 'The Telegraph' served as the Moderator of the seminar. He pointed out that the entire blame for the vanishing landscape of Calcutta Trams may not be directed to the politicians as most of the officers holding key positions in the transport department are either disinterested or unaware of the modern tramways and are always busy

portraying detrimental images of Calcutta Trams. Basu also ensured that there is no dearth of fund for modernization of Calcutta Trams from appropriate heads though the competent authority is unwilling to use it for CTC for obvious reasons. Smritika Srinivasan, ITDP and Vinuta Gopal, ASAR social impact also virtually joined (online) the symposium.

From the audience, a master's degree student from sociology pointed out that as the city public transports are not friendly to disabled people and senior citizens, they are compelled to use private vehicles thereby raising the congestion. He emphasized that Trams and not the metro is an answer to this problem.

To summarize things, experts from widely varied fields converged to the conclusion that deactivating of CTC will leave a far-reaching disastrous effect on the city and they unanimously recommended complete restoration of tram services in the city as a step towards sustainable mode of transport.

The seminar was supposed to be inaugurated by the Managing Director, WBTC and the Transport Minister himself but their conspicuous absence implies the stand of the present government on trams. Mere confirmation of participants from the concerned department suggests the mindset of the powers that be and this attitude is another clear signal that restoration of tram routes doesn't feature in the priority list at all. The conference ended with vote of thanks to SwitchON Foundation for financial and logistic support and CTUA members for other organizational arrangement.

HELP US TO SAVE KOLKATA TRAMS

TRAMS ARE ECONOMIC AND SAFE

Urging all the readers of Rail Canvaz to raise voice for Calcutta Trams which is on its 150th year.

Write letters, posts, emails, tweets to the West Bengal Govt. asking them to revamp the ailing Kolkata Trams

TRAMS ARE ECO FRIENDLY

DANGER
AIR POLLUTION KILLS MORE THAN COVID-19

CTUA
Calcutta Tram Users Association

EIR Early Days : 1850-51

PART-VI

"Few objects of ambition would be more honourable than that of being instrumental in promoting a general and comprehensive system of internal communication by railway through so important a portion of the empire as British India." **--- *Charles B. Vignoles.***

P K Mishra

Presently the Additional Genral Manager of South Western Railway, is a distinguished member of Indian Railway Service of Mechanical Engineers. In addition to his technical acumen, Shri Mishra is an ardent rail enthusiast, historian and researcher. While working as the Divisional Railway Manager in the Asansol Division of Eastern Railway, Shri Mishra has restored several heritage structures and artifacts in the Division, including the famous Durand Railway Institute (built 1878), now renamed as Vivekananda Institute. As AGM of SWR, Shri Mishra led the Heritage team of the railway to create a Museum at Hubbali, apart from improving the Rail Museum at Mysore. He has assisted many non-railway organisations to restore various heritage artifacts including the famous 130 years old clock of the main tower of the Karnataka University at Dharwad. One of the foremost Railway historians of India, Shri Mishra has put on paper several unknown facts of yesteryears through his invaluable books and articles on the Indian Railways.

The first contract, between the East India Company and the E. I. Railway Company, was signed on 17th August 1849, after discussions extending over a period of nearly four-and-a-half years, which 'The Times' would term it an ordeal of unusual severity and disheartening duration.

On the 14th of November, in the year 1849, the Court of Directors had sent out a despatch, written in Cannon Row, in which they laid their commands on Governor-General in Council, *to suffer no time to be lost in putting the railway officers in possession of the ground.* So important did this preliminary arrangement appeared, that the injunction was inserted in two different paragraphs of that despatch.

Acquisition of Land:

Clause 3 of the contract provided that the *East-India Company shall furnish the land necessary for the undertakings as soon as the precise route or direction shall have been fixed which the line shall take between the points indicated in the contracts.* **-- Financial Letter to India, No. 27; dated 14th November, 1849.**

Court of directors had advised Governor General to give his first and immediate consideration on above provision of the contract, and requested that no time might be lost in taking whatever steps might be necessary for putting the railway companies respectively in possession of the first portion of the land which would be required for their immediate commencement, and *that special care may be taken that the whole of the land may be furnished as quickly as it shall be required.*

They had hoped that acquisition would be a simple affair and landowners would come forward to give their land in view of immense increase in the value of land. In a despatch they would mention:

"We trust," it is observed, "that where the lands necessary for these railways are the property of private individuals, no obstructions will be thrown in your way by the owners. It is proved in England that where railways have been planted the lands in their neighbourhood have invariably and immensely increased in value, and we have no doubt it will be so in India." **-- Financial Letter to India, No. 27; dated 14th November, 1849.**

Court of directors wrote: "It was certain, as had been the case whenever railways have been introduced, that they had added greatly to the value of the land through which they passed, not only by offering great facilities for its improvement and cultivation, but also

by affording an easy and cheap access to markets for the produce."

They hoped that such an obvious advantage to the land through which these railways passed would be good reasons for obtaining the land required for them on much more moderate terms than would be possible if such considerations did not exist. **-- Financial Letter to India, No. 27; dated 14th November, 1849.**

'Calcutta Star' on 14th of November 1850 reported that twelve whole months, to the day, had elapsed, and to this moment the railway establishment had not obtained a foot of ground for their operations.

This delay is most deeply to be deplored, not only because it reflects such discredit on our legislature, but also because it has materially retarded the progress of the rail.

Appointment of Rail Commissioner

Mr. C. H. Lushington was designated the commissioner on 12th September 1850 for the purchase of land required for the purposes of the railway company. Realising powers to be inadequate under the existing act, Regulation I, 1824, of the Bengal Code, he desired formal investiture with the powers given by the Act in order to preclude any technical opposition being thrown in his way.

He was gazetted on the 12th of September, but papers would report in November that *more than two months had elapsed without his being vested with power to make a single move, and he had thus been under the disagreeable necessity of receiving pay without giving an equivalent.* **-- Indian news 1851.**

To assist him in his duties, three amins and three deputy collectors were appointed. Two more deputy commissioners were appointed on the request of Lushington in 1851. **-- W. Setonkarr, Under Secretary to Govt. of Bengal, to Lushington, 14th Dec. 1850, Bengal Rly. Cons., 26th Dec. 1850, Vol. XV.**

The Railway Act

In view of the doubts raised by some members of Bengal government in May, 1846, whether the existing laws would be sufficient for acquiring land for constructing Railways, Court advised the Governor General to pass new law, if found necessary.

"If it be found necessary to pass any special legislative enactment for this purpose, you have our authority to do so." **-- Financial Letter to India, No. 27, dated 14th November, 1849.**

There had been a regulation, 'Regulation I, 1824, of the Bengal Code', on the statute book for twenty-six years to "enable Government to obtain the ground required for roads and for other public purposes." By virtue of this law, Government had at once appropriated all the ground required for the purposes of the trunk road, from Calcutta to Delhi. Six hours would have been quite sufficient for the labour of adapting that act to the rail, the 'Calcutta Star' pointed out.

It was considered expedient, for hindering needless delay in making the Railway about to be constructed in the Presidency, and also in any other public work, that more summary power should in certain cases be given for gaining immediate possession of the land needed for such public work.

The main difference between the Regulation of 1824, under the operation of which the great Trunk Road and many other minor works had been completed, and the proposed Act, consisted in the consent clause. Under the old law, the ground was to be taken after the party had consented to dispose of it; or, in case of his dissent, after the award of the arbitrators had been given in.

The proposed Act, with the view of obviating delay, gave the Commissioner power to take over the land in the first instance, leaving the process of compensation to come afterwards.

The new Act, therefore, introduced a new principle into our legislation, and it was probably deemed necessary in this instance to follow the rule usually adopted in cases of similar character and importance, and to take the opinions of the most eminent members in the several departments of the public administration. Having once sought their opinions, it became necessary to wait for their replies.

In Calcutta, the Legislative Council had been exerting itself to diminish the discredit that attached to its sluggishness in the matter of the railway. On the 20th of December, 1850, the Act for securing the ground requisite for the railway was made law, and every obvious impediment removed from the path of the engineers. **-- The Calcutta Star.**

Act No. XLII. of 1850, an Act for giving additional Facilities for Public Works in Bengal, ***was passed by the Hon'ble the President of the Council of India in Council, on the 20th December 1850, with the assent of the most Noble the Governor General of India.***

The railway was designated as a public work under the act. It authorised the persons employed in any public work, with their servants and workmen, to enter upon any land for surveying the ground, and in the case of a road, canal or railway for setting out the intended line thereof, and permitted to mark the intended line by cutting a trench or placing landmarks along the line.

Railway company, with the sanction of the Government or of any officer appointed by Government for this purpose, could cut down and clear away any part of any jungle or tope of trees in the direction of the intended line; *provided that no person shall enter the curtilage of any house under colour of this Act without consent of the occupier, unless between sunrise and sunset, and after due notice given to such occupier.*

The act had provision for imprisonment up to six months and also of fine not exceeding 200 rupees in case of wilful obstructions.

The authorised officers were empowered to take immediate

possession of the land on behalf of the Government, duly recording his opinion. Compensation amount, if not agreed to by private bargain, could be paid later after ascertaining the quantum as per regulation.

If the said officer was opposed or impeded in taking immediate possession of such land as in his opinion was immediately needed, he could apply to the magistrate of the district, who was to enforce the surrender of the land.

The powers of the said Regulation and of the Act extended in the case of any road, canal or railway, to authorize the temporary occupation of any land not more than 100 yards from the centre line of the road, canal or railway as marked on the ground, for taking earth or other materials for making or repairing the road, canal or railway. **-- ACT No. XLII of 1850 of Bengal Presidency.**

Similar act, ACT No. XVII. of 1850, for taking possession of land in Bombay was passed on the 4th April 1850, giving eight months head start to GIPR over EIR in introduction of Railways in the country. Bombay presidency quickly enlarged the powers of existing Act XXVIII. 1839 by adding the term railway in the act.

It was one of the shortest act of one paragraph, which simply mentioned that ***Sections 15 to 21, both inclusive, of Act XXVIII. 1839, shall extend to enable the Court of Petty Sessions, with the sanction of the Governor of Bombay in Council, to take any ground or building within the Islands of Bombay and Colaba which may be needed by the Governor of Bombay in Council for any railway for the conveyance of goods or passengers.***

While Bengal presidency would enact an elaborate act No. XLII of 1850 on 20th December 1850 with eleven sections for giving additional Facilities for Public Works in Bengal. The draft act would be circulated among all heads of department for their comments, delaying the whole process.

The delay in promulgation of act in Bengal presidency would come for criticism from Indian press. It was pointed out that the railway staff had reached Calcutta on the 1st of May 1850, the act might have been discussed with them, if necessary, in a fortnight, and the draft of a new act sent up to Lord Dalhousie, *in Little Tartary*, by the 15th of May. His lordship was so completely at home in all railway questions, that he might with perfect ease would have returned it in a week, with his fell assent and consent.

Allowing fifteen days to Kanawur, and fifteen days back, the draft might, could, and should have been published in the official Gazette, in the last week of June; and when it was so well known to the Legislative Council that the season for operations would commence with the 15th or 20th of October, but the draft of the Act, instead of being published in the Calcutta Gazette on the 1st of July was postponed to the 1st of September, 1850.

The ordinary rule, regarding the drafts of Acts, was that they would be brought up for final consideration either two or three months after they had been published. But it was in the power of Government, in cases of emergency, to curtail this period. Whenever Government was desirous that no time should be lost in passing an Act," the draft was published, and the Act was passed within a week or a day.

"Had the draft of the Act," wrote the Friend of India, "been promulgated on the in 30th of May, it must have become law, in spite of our procrastination, by the 1st of October."

But in the case of the Railway Act, the Government did not appear to have felt any such desire that the Act should be passed without delay, and it was allowed to run the usual period of two months, and the 1st of November was fixed for its being brought up for consideration.

The 1st of November came, and the Legislative Council met for the transaction of business, various acts were passed, but the Railway Act was not taken into consideration. Though, Railway Company had already commenced operations by clearing a long line of trees in anticipation of the Act, on their own responsibility and in dependence, what paper would call *on that passive submission to any one apparently armed with public authority, which was so peculiar a feature of the native character.*

Those operations might have been obstructed at any moment if the Natives had chosen to resist them. The proposed Act provided for the appointment of a commissioner to superintend the arrangement for making over the ground to the railway establishment; and the Government of Bengal, with whom the appointment rests, lost no in appointing a commissioner to the duty.

'The Friend of India' reported that the first inch, the ground devoted to the Bengal railway was made over to the railway establishment on Saturday the 25th of January 1851. Thus, the railway company was put in possession of the first plot of ground one year two months and eleven days after the Court of Directors, in their despatch upon the subject, had urged upon the local government the utmost expedition in preparatory arrangement.

The paper had earlier reported that there seemed to be something in the very atmosphere of Bengal fatal to that energy which was the characteristic of the Anglo-Saxon race in every other part of the world. On the present occasion, two months out of the four, which nature had provided for field operations in Bengal, had been wantonly frittered away, *and we have a gloomy foreboding that the same principle of dilatoriness and lethargy will mark all the progressive operations of the rail. The Government of India has not acted discreetly in this matter.* **-- The Friend of India, January 2nd, 1851.**

Simms' Report

Mr. Simms, the Consulting Engineer to the Government of India and Director of the Railway department submitted his report covering the issues related to route to be followed, gauge to be used, single vs double line and mode of government supervision to F. J. Halliday, Secretary to the Government of India on 29th April, 1850. His report would be

later the primary basis for the famous minutes of Dalhousie on Railways in India.

He recommended that Howrah be selected as the site for the Calcutta terminus; the breadth of gauge for the Railways in India be 5 feet 6 inches; rails of 84 lbs. to the yard be adopted, the experimental line should take the direct route towards the Northwest, and that it be wholly single, or partly a single and partly a double line.

He tried to settle the question as to how many miles of Railway commencing at Howrah could be constructed with the said one million Sterling, including the station, sheds, engines, carriages, workshops, tools, and every appliance for carrying on the traffic of the line, and also the expense of direction and management both in India and in England.

Simms examined the feasibility of 'The Bogwangola Line' and found that the engineering works would be both heavy and insecure, and there would be no effective terminus on the banks of the Ganges at the proposed locality.

"there would be the crossing of the River Matabangha, by no means a trifling work, it being about 500 feet in breadth, and next there would be that of the Jellinghee, which in addition to its requiring a large and expensive structure (about 1,200 feet long, being within 80 feet of the same length as Waterloo Bridge at London) would be attended with the uncertainty of the river keeping to its present bed."

The Rajmehal Line: – He mentioned that a project had been advanced for a Railway from Calcutta to Rajmehal, where a favourable spot for a terminus on the banks of the Ganges really could be built. The line would take the general direction proposed by Lieutenant Colonel Forbes for a canal between that place and the river Hooghly. *Such a Railway might advantageously have its terminus at Howrah, opposite Calcutta, and the length of a line from thence to Rajmehal would be about 180 miles.*

The Best Site for a Terminus at Calcutta: — After considering various options, he found that Howrah was the most suitable locality for the Railway terminus, when the whole capital was so small as one million Sterling.

For it would be situated on the bank of the river, and on that side where deep water exists, consequently is suitable for the erection of a pier, or wharf for craft of various kinds to come alongside, and take in cargo, or discharge at once into the Railway trucks, all which is of no small importance at a commercial port like Calcutta.

Breadth of Gauge most Suitable for The Railways in India

The Court of Directors, in their Despatch dated 14th November 1849, para. 13, had recommended, the adoption of that known in England as the narrow gauge, viz., 4 feet 8 inches; but Simms felt that a wider gauge would be preferable for this country, *and* recommended the adoption of 5 feet 6 inches, or thereabouts, *"as I am not disposed to contend about an inch or two more or less, as I consider that immaterial."*

*"*I think it very probable that in one severe North -Wester, not to mention such hurricanes as that of 1842, the additional 9-1/2 inches of base might make all the difference between the safety and destruction of the trains; and one such accident, attended as it doubtless would be with great loss of life, would probably retard the progress of the Railway system in this country very considerably.*"* **-- Letter from Simms, Consulting Engineer to the Govt. of India, and Director of the Railway Department, to Halliday, Secretary to the Govt. of India, dated 29th April, 1850.**

Permanent way: — He recommended 84 lbs. to the yard rails for adoption as it would combine the greatest utility and ultimate economy. By the adoption of lighter rails, a saving might be affected in the first instance, but with the importance of having a substantial Permanent Way, he was inclined to disregard any such saving in comparison with the whole cost, and the solid advantages to be derived from having good upper works to the Railway, both as to ultimate outlay and comfort and safety in travelling.

On the Extent & Route of the Experimental Railway, with the given Capital

Adopting the approximate estimates, Simms calculated that 92.8 miles of double line or 142.36 miles of single line of Railway commencing at Howrah could be constructed with the capital of £ 950,000.

On the direct line, double line of Railway, as suggested by the Court of Directors, would extend to about 30.8 miles beyond the station of Burdwan, and fall short of the Coal-fields at Raneegunge by about 23.2 miles, while the river line to Rajmehal would extend to about 16 miles beyond Cutwa, and be less than 3 miles in excess of half the distance to Rajmehal, of which place it would fall short by about 87.2 miles. *Thus, it appears that upon either of the two routes, a double line of Railway (extending about 92.8 miles from Howrah) would terminate at no particularly useful point.*

Simms was of the opinion that the terminus at the end of 92.8 miles on the direct route, (on the Trunk Road) would be much more useful than the terminus situated at the same distance from Howrah, on the river route, or on the way to Rajmehal. The terminus on the direct route would be on the great road to the North-West of India; whilst the latter, without being of any use in that respect, would fall far short of the difficulties in the navigation of the Bhageeruttee River, and therefore would not relieve the traffic on the River Ganges in the least, which traffic would have to make the circuitous route of the Sunderbunds as at present.

He approached the consideration of the adoption of a single in preference to a double line, on account of the smallness of the sanctioned capital with some difficulty, because the Court of Directors, in the Despatch, paragraph 11, had stated:

"They are clearly of opinion, that although it would be a slight saving of outlay in the first place, it would be unwise to make the experiment upon a single line,"

Simms didn't agree with the Court's observations that the "real saving of capital would be very little," and would

Simms didn't agree with the Court's observations that the "real saving of capital would be very little," and would amount to "little more than £1,000 or £1,200 a mile," the earth-work and bridges, &c., being constructed suitable in width to receive a double line hereafter, if necessary.

He remarked that the saving of outlay in the first instance, under such circumstances, would certainly amount to no more than the difference in the cost of the Permanent Way between a double and a single line, which would be around £ 2,86378. 10d. per mile, but if the earthwork and bridges, &c., were constructed only for a single line, and with a suitable working stock, the saving would be still greater, namely about £ 3,564 per mile.

A single line of Railway throughout its length would reach into the mineral districts on the direct route, and extend 26 miles beyond the Raneegunge Collieries, and reach well into the Coal district. But on the route to Rajmehal it would fall short of that place by 44 miles.

With a view to meet the wishes of the Court of Directors, and at the same time obtain a Railway to the Collieries, he suggested that the line might be made double for a portion of the distance, and the remaining portion might be made single; such an arrangement would give a double line where it would be most needed, and the portion of single line would occasion no inconvenience to a well-regulated traffic.

Simms recommended that it would be most advantageous to expend the million Sterling on the direct route, either wholly single, or partly double and partly single. Subsequently line to Rajmehal could be constructed, if deemed desirable, either for the purpose of relieving the Ganges traffic at that point, or with a view to its extension along the valley of the river to the North-West instead of prolonging the direct line.

Such a Railway could diverge from the Burdwan line; and as that portion of the latter line beyond the junction of the Rajmehal line would benefit the Coal district, no portion of the outlay would be expended in vain, - whether the whole line to the North-western Provinces be ultimately taken direct, or by the circuitous route of the valley of the Ganges.

Simms suggested that the most successful control and supervision would be exercised by leaving the whole business in the hands of one man, who should be held most fully and completely responsible for the whole business, and to this end he should be unfettered and uncontrolled by any colleagues whatever, and subject only to the Government of India, with whom he should be in direct communication. **-- Report on the proposed Railway in Bengal. F. W. Simms, C. E., Consulting Engineer to the Govt. of India, and Director of the Railway Department, dated 29th April, 1850.**

Arrival of George Turnbull and Engineering Staff

Mr. Stephenson, the managing director, and Mr. George Turnbull, the resident engineer-in-chief, embarked for India on the 20th of March, 1850, arriving at Calcutta the latter end of April. On arrival, Mr. Turnbull immediately started surveying of the section suitable for commencement of work and requested the board to send additional engineers to India.

Upon a requisition from Mr. Turnbull, the board, with the sanction of the East India Company, had sent out by the steamer of the 20th of August, 1850, three additional engineers, and had authorized the appointment of a fourth on the spot, so that the services of these engineers would be available at the commencement of the ensuing cold season in India. **-- Half yearly meeting EIR, August 29th, 1850.**

The board had tied up with the Peninsular and Oriental Steam Navigation Company, in reducing the passage-money of the engineers and others who had proceeded to India in the service of the company.

Mr. Turnbull sent his report to the directors as to the line of railway which, in his opinion, should be first constructed. The Government engineer also made report to the Government of India on the same subject, and that the views of this officer and of Mr. Turnbull upon all essential matters were in perfect harmony. The report of the Government engineer was forwarded by the Legislative Council of India to the Governor-General for sanction.

In the meantime, Mr. Stephenson had received, through his Excellency's secretary, "his lordship's assurance that his best and constant attention will be given to the undertaking, and that he entertains an anxious desire to facilitate by every means at his command the operations of the East Indian Railway Company, and to secure the successful conduct of an enterprise in which both the Government and the shareholders have so great an interest." **-- Half yearly meeting EIR, August 29th, 1850.**

If any pioneer of Railway construction deserved a memorial to his name, if one person, who could be credited with laying of Rail lines in India against all odds, and personally led the construction work from the front, he was George Turnbull, the Chief Engineer responsible for construction from 1851 to 1863 of the first Railway line from Calcutta: the 541- mile line to Benares enroute to Delhi.

He was rightly acclaimed in the Indian Government's Official Gazette of 7th February 1863 as the "First Railway engineer of India".

In a particular instance Mr. Turnbull on his own authority cut a lane, 100 feet wide, through jungle and other impediments from Howrah up to Chandernagore and braved the consequences. As it happened, no litigious results followed, but the Chief Engineer was warned not to do the like anymore.

Mr. John Marshman, the editor of 'The Friend of India', and Mr. Turnbull's personal friend, on hearing of this exclaimed, "Well! there has not been such an act of audacity performed in these parts since the time Admiral Watson opened fire upon the Dutch fleet in the Hooghly when we were at peace with Holland." **-- The History of the East Indian Railway by George Huddleston.**

Government Audit of the Account

The promoters of EIR had introduced the clause of Government audit under the act of parliament, which they felt would not only give protection to the shareholders but would also inspire confidence on the part of the public in railway undertakings. All the books kept by the Directors, as well as all the accounts which passed between them and the East-India Company, or any other person were open to inspection by the proprietors.

Chairman Mr. Aglionby, M.P stated in the third annual general meeting of the Company, that under the arrangement with the Government of India, as well as under the Act of Parliament, the proprietors would have the essential benefit of a government audit, believing it to be the best thing for all parties.

He could not disguise from himself the great jealousy which such a proposition had occasioned in the minds of the Directors of other Companies but in the performance of his duty he had supported that measure in Parliament, and he believed he was the only member connected with railways who did when first a Bill to affect that object was introduced. **-- Chairman speech, Third Annual General Meeting.**

The Company possessed the advantage of a government audit, for not only was an ex officio Director appointed by the East India Company, but the accounts were submitted to an independent accountant appointed by the Government.

Another great security, which Rail Company had was, that under no circumstances could any money be drawn without the sanction of the East India Company, for their ex-officio Director had a seat at the Board, and would at all times be able to see what was necessary to be done, so that if there should be any over-drawing of accounts, or any application of money to an improper object that would immediately be stopped by that officer.

Distribution of Un-allotted Shares

Shareholders were informed that out of 5,000 shares which had remained un-allotted at the last meeting, 1,000 of them had been allocated to proprietors in India.

With regard to the remaining 4,000, it was first proposed to divide them among all the shareholders, but objections occurring to that method, after much consideration it was thought best that they should be allotted to persons who might really intend to keep them as investments, and not dispose of them in the market, and had chiefly been appropriated to trustees who sought a safe investment for their trust money, without any wish to change or sell out.

The Delay & Criticism

The delay in commencement of works by EIR and encouraging news from GIPR would invite severe criticism from press and 'The Daily News' reported that the prospect of the establishment of railways in Bengal had for the present been utterly ruined, the line resolved on turning out impracticable; the 40,000/- expended on preliminary operations being thus entirely thrown away.

"It is certainly, strange that everything undertaken in worse Bengal should be ruined by jobbery, if by nothing Who will, after this, be found fool-hardy enough to trust his money in undertakings got up in Calcutta?" **-- The Daily News.**

'The Times' reported the entire extinction of all hopes of the introduction of railway communication into Bengal for the present as the sum of 1,000,000/-, the limit of the guarantee, being considered was inadequate to the construction of a sufficient length of line to yield a paying traffic. The Times, in its leading article of the 20th ultimo, said, that, in Bengal, for instance, three indispensable conditions were attached to the construction of the East-Indian Railway: first, that it should start from Calcutta; next, that there should be a double line of rails; and, lastly, that the expenditure should not exceed a million sterling. These conditions, taken together, operated in such a manner that the only feasible line was one which must terminate in a swamp, "and" which must inevitably run to ruin for want of use or repair, and would leave the great enterprise far more hopeless than it is at present."

The above reports were immediately contradicted by EIR, and rejoinders were sent to above journals.

"Sir, - I have authority for contradicting, as wholly unfounded, the statement relating to the affairs of this Company, contained in the summary of Indian intelligence published in yesterday's (20th) Daily News." **-- D. I. Noad, Secretary; East Indian Railway Company, May 21st, 1850.**

Secretary East Indian Railway, Mr. Noad, also wrote to the editor of 'The Times' that the *announcement contained in the paper of the 20th instant, on the proposed railway in Bengal, and the perusal of the comments made by some portion of the Indian press on the subject, had astonished much.*

Blaming the coterie of Calcutta, he said that certain gentlemen at Calcutta had made up their minds that, after six years of labour, the efforts to introduce the railway system into the Bengal Presidency were to be extinguished, on the ground, as it was stated, that the first section proposed to be undertaken would not yield a paying traffic. He clarified that the novelty of the experiment of a railway in India required external assistance to render it a satisfactory investment to the capitalists undertaking it. This principle had been the keystone of the proceedings of the Companies." **-- D. I. Noad, Secretary; East- Indian Railway Company, May 21st, 1850.**

The directors thought it right to correct a misapprehension that the capital of the company was limited to 1,000,000/- sterling and that, in consequence of such limitation, and of certain proposed details of construction, the experimental line to be laid down by this company must terminate at such a point as to prevent its being remunerative.

The line first to be made was to be a fair experiment and was to be carried to such a desirable point, in the opinion of the Government of India, would render it sure of being so. If the millions of capital be insufficient for this object, new capital was to be raised under the guarantee of the East India

Company on precisely similar terms as the original capital. -- **The Half-yearly Meeting of EIR, Aug. 29th, 1850.**

Shareholders were informed about the delay in commencement of works and Directors admitted that they had no power of expediting matters as they were entirely under the control of the Act of Parliament and the agreement with the East- India Company. The ex-officio Director sat at the Board and had the power of putting his veto upon the measures proposed by the Directors, besides which the Board of Control also exercised authority over their proceedings.

What passed between that Board and the East India Company he could not say, but no doubt the communications occupied much time. It should, however, be borne in mind, that although delay might take place in finishing their undertaking, yet mean while the proprietors were receiving 5 percent upon their money. -- **Chairman speech, Third Annual General Meet Minutes of Lord Dalhousie, July 1850.**

Lord Dalhousie, on 4th July 1850, wrote the famed minute from Chini in the Himalayas on the subject, which was well worthy of his reputation as a statesman, and showed the keen interest he had in the success of Indian railways. He objected to the proposed alignment, recommended that the railway should be taken through Burdwan to or towards the coalfields, that the line should be made single instead of double, and that a broader gauge than 4 feet 8-1/2 inches should be adopted.

He was most anxious that this so-called "experimental" line should prove a success. He said that its object was to prove, not only it was practicable to construct railways in India as engineering works, but that such railways when constructed would, as commercial undertakings, offer a fair remunerative return on the money which had been expended on their construction, so that the public may thereby be encouraged to invest their capital in the construction of similar works in other parts of India.

I am forced to the conclusion, that if the instructions with which the Government has been furnished are to be strictly adhered to, if the conditions attached to the construction of the present line are not in any respect to he relaxed, there is little hope that the Government will be able to conduct this experiment to a successful issue on anyone of the lines that have been indicated." -- **Railway Policy in India – Horace.**

He urged that there was more risk of the ultimate failure of railway enterprise: in India from the discouragement which would arise from this experimental line turning out to be unprofitable, on account of the superfluous expenditure required for a double line, than from any accidents which could possibly be caused by its being made a single line. -- **Railway policy in India -- Horace**

Railroad from Calcutta to Nowhere

Papers would complain that EIR was busy in making calls one after another on Shareholders, but even at the time of making sixth call, the Company did not appear to have even a distinct project or idea. This state of things must soon terminate the absurdity of making a railroad from Calcutta to nowhere was beginning to be too much even for English shareholders.

"We all know that a line to Mirzapore or Benares would be very expensive, and whether it would pay at once or not may be a question; but about this ninety-mile railway there is no question at all. A railway to the moon might pay and it might not, but the latter would be no argument for a railway to the clouds." -- **Hurkaru.**

One ex director of the East Indian Railway Company wrote that the shareholders of the East Indian Railway had entered that undertaking under two different inducements: the first, the expectation of a good profit from the working of the railway; the second, the assurance of a minimum dividend.

The former was now repudiated, and the latter, not being a guaranteed dividend, was certain only while the line was being made, and was then liable to partial absorption or extinction; and, without an absolute certainty of the principal being returned intact, should the shareholders give the required six months 'notice to the Indian Government that they wished to get back their money. -- **Letter by an Ex-Director, East Indian Railways.**

EIR would be blamed for telling its shareholders that they had embarked in an undertaking that would yield "a return much more remunerative than had hitherto been obtained upon any project of a similar character" then, when it had been demonstrated that no line could be made for the amount guaranteed that would pay its own working expenses.

"For four years great promises have been made, large sums have disappeared, and yet a sod has not been turned; but we are told that Messrs. Stephenson, Turnbull, and Simms are concocting a modification of the old plan, or a new one altogether; then we would say, if the line is still to be discovered, what has been done with the money? It is indeed a distressing spectacle to see great and important as undertaking so egregiously bungled, and it is evident that the whole subject must be considered de novo." -- **Allen mail 1850 page 528.**

No shareholders were ever so confiding, and no directors ever promised more fairly or attractively than those of the East Indian Railway Company. Five years ago, there was to be great profit, and a guarantee was only required while the line was being constructed, afterwards, profits became doubtful, and it would then have been very improper in private individuals to embark their capital in a great and distant undertaking without a guaranteed dividend.

Exasperated with delay in introducing Railways in Bengal presidency, the Indian press, would denounce their system of management as foolish, their expenditure as flagrant and useless, and their guaranteed capital of 1,000, 000/- as totally inadequate. -- **Allen mail 1850 page 528.**

Commencement of Work

The Bengal Railway staff, like their brethren in Bombay, in

the *case of the wooden stakes*, would not wait the delay of the law; and started clearing a path for their observations and operations to select the line where there were the fewest obstructions. The works were commenced in September 1850.

The case of wooden stakes was an interesting case study on delay in decision making and it would become metaphor of bureaucratic working in India. The Bombay Gazette, under the equivocal head of 'Railway Interests at Stake', gave a droll account of Indian notions of railway speed.

It appeared that the working staff sent out from England had become tired of loitering about Bombay; the chief cause of their inactivity being the want of "five hundred wooden stakes," for which they had long applied to the railway secretary at that presidency.

The Bombay Gazette was quite annoyed with the railway staff for disturbing the usual course of Indian official quietude.

'Indian News' commenting on the issue would quip, that the railway staff had no just cause of complaint. They divided very little more than five thousand rupees a month between them, and even if it were a trifle more they might manage to get through: it without very much difficulty. As to want of employment, that was a mere temporary inconvenience which a few cigars and other Indian luxuries would speedily remove.

Application was made to Government for permission to clear away the jungle and trees on the centre line of the Railway, for the purpose of marking out the same, and making the necessary surveys and sections, pending the passing of the new Legislative Act. This Act came into force on the 20th December 1850. Mr. Turnbull reported on 3rd January 1851 to Directors that Mr. Lushington, Commissioner under the Act, was taking active steps for obtaining possession of such land as might be required, but they had not been put in possession of any land till date. Charles Lushington, the valuation commissioner reported that the most difficult problem was that of ascertaining the title of the property.

"Huts, houses, bamboos and trees of every description mixed up together without any boundary to mark the division of the property or anything of any description, beyond proximity to huts or houses, to give a clue to the parties to whom the trees may actually belong." **-- Report by Charles Lushington, Selections from the Records of the Bengal Government, No. IV.**

'The Poornochundrodoy', a native paper, welcoming the introduction of railway wrote that never had there been a similar occasion to exhibit the patriotism and regard for their country which was now presented since the English rule had been recognized in the country. Paper hoped that all would come forward and show that, when the Government undertook a work solely for the benefit of the country, the native population had public spirit enough to support the Government in every way in their power. It appeared that the railway would require about one hundred yards of land in width, and at stations an additional quantity, but the entire amount was very small; that upon this strip of land Rail Company was going to spend about one or two lacs per mile for the good of the country, and that they expected the traffic would be so large as to pay them a good dividend.

"Whether this be the case or not, one thing is certain, it will do more for the country, and for every human being in it, than any measure ever previously carried out; and if ever a cause deserved the earnest, cordial, and combined support of the native population, it is to aid the introduction of a railway which is eventually to connect Calcutta with Delhi and the Punjab, and to bring Bombay within forty-eight hours' travelling distance." **-- The Poornochundrodoy, Allen's Mail 1851.**

Turnbull reported that every effort had been made, by consent of the parties occupying the lands, to open out a track along the centre line, and a considerable amount of clearance had been made, and surveys and sections already taken.

"Of the 40 miles, there now only remained about 5 or 6 miles of jungle and trees to clear, on the centre line about 15 miles had been surveyed, and about 10 miles of the sections effected, and I confidently expect that the whole will be done before the close of the present month." **-- Letter from Turnbull, Chief Engineer to the Chairman and Directors of the East Indian Railway Company, 3rd January 1851.**

The natives, in knowing that the road was undertaken on the part of the Government, and that they should receive compensation for damages, as in the case of all other public works, had acquiesced in these proceedings, contenting themselves with taking a note of the trees and huts which were being removed.

"Our own railway," said the Friend of India, "was brought to a dead lock." It appeared that the railway staff had arrived at the suburbs of Calcutta, where they met with a garden, the property of the two sons of one Rughoo Ram, and held in joint tenancy by them with the Baboos Ganga Prasad and Gooper Kistrun Gossain.

These native gentlemen had no doubt heard of the sums which had been paid by railway companies in England, to gentlemen who seemingly acquiescing in railway objects till the line approached their own domains, had demanded, and obtained large sums before further progress. In this case, one of the brothers had permitted the encroachment to be begun, and some trees were cleared away, when the younger brother who, was not on good terms with the elder, forthwith interdicted all further progress, and sent in a letter from his attorneys, demanding immediate compensation, under the threat of an action in the Supreme Court.

At the same time, he lodged a regular complaint before the magistrate of Serampur requesting that the railway people might be warned off his garden; the magistrate having, of course, in the absence of the Act, no other alternative than to comply.

"Now, although it is not a little humiliating that a great national undertaking should be stopped by a few native Baboos, no one can blame them for the course they have

pursued, which has, no doubt, been the one which appeared most conducive to their own private interest; in short, they had done precisely as a London merchant would have done had he been in their position." **-- The Friend of India.**

'The Friend of India' attributed the blame squarely on the Government, the supineness of which thus, month after month, and year after year, permitted such national undertakings to be stopped for want of an Act which would have rendered such stoppage impossible? Indian press would complain that the Government of India, the director of a hundred and fifty million of the human races, was indulging in a never-ending siesta.

The resistance offered at village Hampden would be termed as "retarding of a great national undertaking, at the most important season of the year, and at a time when every moment was worth more than its weight in silver".

It was extremely galling to authorities that natives were offering successful resistance and gaining their own terms for compensation.

"He is gaining his own terms as to compensation, he is offering a successful resistance to the British Government, and he is setting an example to the occupants of the remainder of the line, which they will not be slow in following; in other words, he is gratifying his avarice and his pride in an unlooked-for way, of which he is evidently making the most."

'The Friend of India' reported another incidence of interruption: "On Tuesday last, the officers of the railway establishment made another effort to prosecute their operations through a portion of this town, with the understanding that the natives whose huts might be unroofed should be fully remunerated for them."

These operations were carried on without any interruption along one section of the line, which ran through a garden belonging to the wealthiest and the most respectable family in the town. In another section, however, the workmen came upon the house of a washerman, who is said to have gone with his complaint to the young Baboo, who had been rendering himself so notorious by obstructing the rail in this town, and a native youth, who was known as his private secretary, soon after made his appearance on the spot, and excited the people to resistance.

A row ensued, in which clods of earth were mutually exchanged, and the head of the railway establishment here immediately determined to draw off his men, and before night sent them out of the town.

The paper hoped that this delay was only temporary; because, as soon as the Act was passed, operations would be commenced with redoubled vigour, in the hope of bringing up lost time.

"This great national undertaking has thus been suspended by the supineness of the Legislative Council, and the opposition of a Bengalee Baboo! Unfortunately for the interests of India, Lord Dalhousie was far away in Little Tartary, and the Legislative Council went fast asleep, and we have lost half the season. The Act was to have been passed on the 1st of November; on that day it had not even been sent to the Governor General for his approval."

The fact is, that the Bengal railway operations are at a complete standstill, after thirteen months wasted in passing the Act enabling the engineers to obtain ground; the Commissioner now that the Act is obtained, does not consider his power sufficient, whilst the cold season and the salaries are slipping away, but everything else stands still.

Major Kennedy, the consulting engineer would later report that the valuation Commissioner had, under the sanction of Government, afforded every facility to the Chief Engineer to clear the centre line proposed by him to an extent of 20 feet through jungle and plantations. Before the entire completion of this operation, some irregularities in cutting more than was authorized, produced opposition on the part of the landholders, and rendered it necessary to proceed with much caution, and according to the strictest letter of the law; some delay was thus caused.

"This error originated from inadvertence in employing a party of 200 instead of 20 men to clear the centre line, and much caution is required, particularly by limiting the workmen to a very small number, when performing this class of work, otherwise confusion and unnecessary damage must invariably occur. The whole of the centre line has now been set out, with the exception of a very small portion in Serampore, although not one - fourth of the survey has yet been given in to me." **-- Letter From Major J. P. Kennedy. Consulting Engineer, Railway Department. To F. J. Halliday, Secy. to The Govt. of India, 29th January, 1851.**

After the railway surveyors marked the boundaries of the lands to be taken for permanent or temporary occupation, in accordance with Section II of Regulation 1 of 1824, the deputy collectors would issue notices setting out details of the land and other property proposed to be taken and the purpose for which it was required. Landowners were advised to present their claims with the necessary details within a specific date, which would be compared with land & property records prepared by local revenue officials. The land would be handed over to the Railway company once all claims had been defined and classified. **-- Report by C. H. Lushington, Railway Commissioner, 18th Sept. 1851.**

The first 'inch' of ground was made over to the Railway Company on 25th January 1851. Operations relating to taking possession of land were being carried out at a fast pace. The Friend of India wrote on 13th February, 1851—

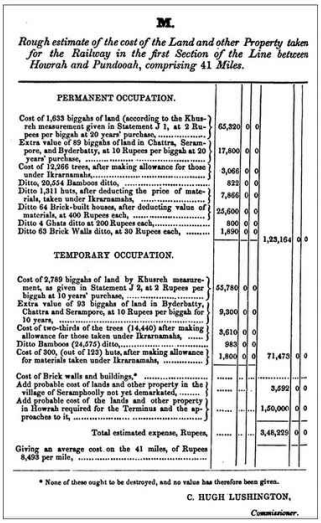
"We are also happy to add that the operation on the line in our neighbourhood, have been quickened. Mr. Lushington had made over three entire miles of the line to the Railway establishment, and though the present season has been lost, it is gratifying to find that the obstacles to progress presented by 'the passive resistance of circumstances', so constantly felt in the East, are steadily disappearing, and that the contractors are now enabled to carry on their labors with alacrity and zest.

We have no longer any doubt that the rail will be carried on from Calcutta to Delhi, if not to Lahore, without any interruption. The abundance of unemployed capital at home at the present time, and the cheapness of iron, will naturally suggest the propriety of extending the capital and the operations of the Company." **-- Friend of India, 13th February, 1851.**

'Friend of India' reported on 17th April 1851 that of the forty miles of line from Howrah to Pandooah, for which contracts had been made, the ground along thirteen miles had been already transferred to the railway officers; two-thirds of the land, therefore, still remained to be made over.

But not one of the trees which had been cut down, and not one of the houses which had been demolished, on the ground already placed in the hands of the contractors, had been paid for as yet, it added. All the claims to compensation for the land, likewise, remained to be settled.

"We are afraid to state the number of these claims, as popularly reported, lest we should be suspected of exaggeration; but as the whole line of forty miles, for which contracts have been made, comprises nearly 9,000 Begahs, if we allow three Begahs for each holding, we shall have now fewer than 3,000 such claims." **-- Friend of India, April 17th, 1851.**



M.

Rough estimate of the cost of the Land and other Property taken for Railway in the first Section of the Line between Howrah and Pundooah, comprising 41 Miles.

PERMANENT OCCUPATION.						
Cost of 1,633 bigahs of land (according to the Khusreh measurement given in Statement J 1, at 2 Rupees per bigah at 20 years' purchase,	65,320	0	0			
Extra value of 89 bigahs of land in Chatira, Serampore, and Hyderbatty, at 10 Rupees per bigah at 20 years' purchase,	17,800	0	0			
Cost of 12,205 trees, after making allowance for those under Ikrarnamahs,	3,066	0	0			
Ditto, 20,554 Bamboos ditto,	822	0	0			
Ditto 1,311 huts, after deducting the price of materials, taken under Ikrarnamahs,	7,866	0	0			
Ditto 64 Brick-built houses, after deducting value of materials, at 400 Rupees each,	25,600	0	0			
Ditto 4 Ghats ditto at 200 Rupees each,	800	0	0			
Ditto 63 Brick Walls ditto, at 20 Rupees each,	1,260	0	0			
				1,23,164	0	0
TEMPORARY OCCUPATION.						
Cost of 2,789 bigahs of land by Khusreh measurement, as given in Statement J 2, at 2 Rupees per bigah at 10 years' purchase,	55,780	0	0			
Extra value of 93 bigahs of land in Hyderbatty, Chatira and Serampore, at 10 Rupees per bigah for 10 years,	9,300	0	0			
Cost of two-thirds of the trees (14,440) after making allowance for those taken under Ikrarnamahs,	3,610	0	0			
Ditto Bamboos (24,572) ditto,	983	0	0			
Cost of 300, (out of 125) huts, after making allowance for materials taken under Ikrarnamahs,	1,800	0	0	71,473	0	0
Cost of Brick walls and buildings,*	.....	..	..	.....		
Add probable cost of lands and other property in the village of Seramphooly not yet demarkated,	.....	..	..	3,592	0	0
Add probable cost of the lands and other property in Howrah required for the Terminus and the approaches to it,	.....	..	..	1,50,000	0	0
Total estimated expense, Rupees,	.....	..	..	3,48,229	0	0
Giving an average cost on the 41 miles, of Rupees 8,493 per mile,	.....	..	..			

* None of these ought to be destroyed, and no value has therefore been given.

C. HUGH LUSHINGTON,
Commissioner.

The quantity of land taken in the first section of the line from Howrah to Pandua was about 43 bighas per mile, on the average, or fourteen acres for permanent occupation, and about 78 bighas or 25 acres for temporary occupation. **-- Report by C. H. Lushington, Commissioner for the Railways, 18th Sept 1851.**

3,25,000 Rupees were provided in budget estimate for purchase of land in Bengal for Railways in 1851. **-- Report from the select committee.**

Head-start by GIPR

While the promulgation of new act and acquisition of land was being dealt at a leisurely pace in Calcutta, GIPR was racing ahead to commence construction of the first section after monsoon.

"It is expected that the construction of the first section of the Bombay Railway, the only undertaking of the kind now extant in India, will be commenced at the close of the approaching monsoon."

The Bombay papers reported that the first sod of the first railway in India was turned up at that Presidency on Wednesday the 31st of October,1850.

"The ceremony of turning 'the first sod' of the Great Indian Peninsula Railway, took place yesterday morning, at half past seven, at the side of the hill opposite the salt-pans belonging to Bomanjee Hormusjee, Esq., a little to the north of Sion. Owing to the absence of any public intimation of the intended event, the number of persons assembled to witness it was not large.

We observed, however, the Hon. J. P. Willoughby, Esq., Senior Member of Council, Captain French, Town-Major; Major Swanson, Juggonath Sunkersett, Esq., and Cursetjee Jamsetjee, Esq., Members of the Local Board; Captain J. H. Crawford, Superintending Government Engineer; Bomanjee Hormusjee, Esq.; W. Balston, Esq. contractor, be sides J. J. Berkley, Esq., the Chief Engineer, and his colleagues and assistants; the Secretary, and other gentlemen connected with the rail way establishment. There were also several native spectators.

The sod having been turned, a wheel-barrow was filled with earth by the gentlemen present, each contributing his shovelful, and a native labourer then wheeled the barrow across the road to the border of the marsh opposite, where the contents were discharged by the Hon. Mr. Willoughby. Three hearty cheers were next given, and Success to the Railway' was cordially drank, in some excellent champagne provided for the occasion. The contract for proceeding with the construction of the Sion embankment out of the hills north and south of the marsh, has been taken by Mr. W. Balston, and as this gentleman expects very shortly to receive a consignment of railway plant from England, it is believed rapid progress will be made with the work." **-- The Telegraph and Courier, November 1st, 1850.**

Calcutta papers rued that this honour might have been associated in the records of this empire with their own Presidency, but for the oriental somnolence manifested by their Legislative Council.

In the case of the Great Indian Peninsula Company, the two points of Bombay and Callyan were determined; but in the case of the East Indian Railway the starting point, Calcutta, only was fixed. Governor General had to determine not only the exact route of this line, but also the point to which it would be most expedient.

Finalisation of Plan

Commencement of work in Bombay presidency would spur authorities in Bengal to act and Indian News reported that the Governor-General had ordered a commencement of railway operations here, the first section of the experimental line to run up the western bank of the Hooghly from Howrah, opposite Calcutta, to the town of Hooghly, a distance of about twenty-five miles. From this point it might be continued, as was yet to be decided, either towards Burdwan or towards Rajmahal. **-- Indian news 1850.**

The Minute of the Lord Dalhousie dated the 4th of July 1850, sanctioned the construction of the Experimental Line of Railway between Howrah and Pundowah with earth- works and masonry for a double line of rails. It likewise recommended that the Hon'ble Court should so far alter their decision as to permit for the present the laying down of only a single track upon this portion, and it further recommended an extension of this line from Pundowah to the Collieries at

Raneegunge by means of a single track, in every respect, earthwork, masonry and rails, enclosing, however, the land required for running a double line subsequently.

Tenders were received from seven parties on the 6th August, 1850 for executing the 40 miles of Railway from Howrah to Pundowah and on the 6th September last, sanction was given by the Government of India to the acceptance of the tender of M/s. Hunt, Bray and Emsley, of London, for the first 25 miles of the line from Howrah to a place in the neighbourhood of Hooghly, and of the tender of M/s. Burn and Co., of Calcutta, for the next 15 miles, terminating near the village Pundowah. **-- Report of Turnbull to the Chairman & directors of the EIR Company, 3rd January 1851.**

The railway company at Calcutta had advertised for tenders in 1851 for the construction of the section of the line from Pandua to Raneegunge, to commence with the approaching cold weather: for the convenience of contractors, the section was to be divided into lots of between five and six miles each.

Association of coal owners were desirous of laying rail line to transport coal from Raneegunge Collieries and a delegation met Major Kennedy to carry out the project of a railway from the collieries. East Indian Railway's predominant position didn't allow other companies to enter in the fray.

We learn that Major Kennedy expressed himself much pleased with the project of these gentlemen, and considered the views promulgated by them to be perfectly sound and practical; but as it is now certain that the East-India Railway Company will provide a railway from the collieries, either a branch or main line, there is no occasion of course for any special company for the purpose; and the functions of the committee are at an end. **-- Hurkaru, December 24th, 1850.**

Charge would be brought against the railway company of having marked out the line to serve the interests of the Bengal Coal Company. 'The Friend of India' reported that the line had been laid down irrespective of any other consideration than the economy of construction afforded by the best available levels. Raneegunge was only intended to be a temporary terminus to avoid the immediate crossing of the Noonea river, while the coal branch line of the railway would be carried to the junction of the Damooda and Barrakur rivers.

So far from the proprietors of any one colliery being able to monopolize the approaches, or to exclude other parties from the benefit of the rail, the railway company have power, under existing acts, to open new roads wherever they may be deemed desirable as affording accommodation to the inhabitants and contributing to the traffic of the line." **-- Hurkaru, September 26th, 1851.**

It was reported in the ordinary half-yearly meeting of the proprietors that the first section of the company's proposed line of railway from Calcutta to the northwest provinces of India had been determined upon. The authorities had sanctioned the construction of a line of railroad from Howrah, opposite Calcutta, to Pundoah, with a branch line into the Raneegunge Collieries.

It was understood that for the first 40 miles, from Calcutta to Pundooah, the line would be double, and that it would be carried thence as a single line a further distance of 90 miles, to the Raneegunge collieries, near Burdwan. These mines supplied Calcutta with coal, and being situated on the direct route, were to constitute a large source of traffic. **-- Half-yearly Meeting, 1851.**

The total length would be from 120 to 130 miles and would in the first instance be laid with a single line of rails. Contracts for the construction of the first forty miles to Pundoah, had been let in India, and the works commenced.

These contracts, which have been taken by highly respectable parties, embrace the maintenance of the line at the expense of the contractors for three years after construction, and are let upon terms which have received the sanction of the Government of India, and the company's agent and engineer. **-- Times – Allen mail 1851.**

The First Sod

The Calcutta Chronicle reported, that the 'first sod' of the Great Indian Railway had been actually turned; and the work commenced in right earnest. Trees, plants, houses, that seemed to have fallen within the line of the expected railroad, were now being removed, and the inhabitants of the neighbouring villages at Ballee, Wooterparah, Sulkeah, &c., were loud in their complaints, as no compensation was offered for the injuries sustained in consequence. The local magistrates did not entertain complaints preferred against the railway pioneers, rather recommended them to apply to Government about the damages done.

The Hurkaru stated, that the railway contractors had already cleared the line between Howrah and Serampore, but heavy complaints were made by the native population, whose property, had been sacrificed without due notice, and in a very harsh manner.

"In one case even a poor woman in the agonies of childbirth was denied one night's delay. We would faint hope that these accounts are grossly exaggerated. The worst feature of the case as represented, is that no record is kept of the injury to individuals, so that it will be difficult for them to obtain compensation." **-- Allen's mail 1851.**

The Bengal Hurkaru reported that the site of the railway terminus at Howrah had at length been decided upon. The property belonging to Captain Oakes, near the Howrah Ghaut, was to be appropriated for that purpose, and had been bought for about seventy thousand rupees." **-- Hurkaru, 20th August 1851.**

To be continued in the next issue....

Rupasi Bangla Express goes LHB

Arkopal Sarkar

On 22nd December, 2022 the Santragachi-Purulia Rupasi Bangla Express ran first time with its newly allotted LHB rake. On this occasion, the rake and the locomotive were decorated beautifully by a group of railway enthusiasts, headed by 'SER Fanatics'. The team stayed overnight at Santragachi to work on the rake and they also designed a new Train Board for the new rake. Much has changed about this train since its introduction. Rupasi Bangla used to run combined with the Howrah-Bhubaneswar (later extended upto Puri) Dhauli Express from Howrah with a 6 am departure during its onwards journey. Later, this combo was done away with and Rupasi Bangla became a completely separate train with departure terminal changed to Santragachi, although the train arrives Howrah during its return journey. Now, a new chapter starts for the train as it began its journey with the brand new LHB rake. TrainTrackers presents some exclusive photos of the end to end journey in the newly LHBfied Rupasi Bangla Express upto Purulia Jn.

Photographs taken by Arkopal Sarkar

Bengal's First Vande Bharat

Team TrainTrackers was part of the history

Somsubhra Das

Didn't know if Santa ever existed but our parents ensured that his gifts never fail to arrive every Christmas Day! The Christmas of 2022 was like no other Christmas as West Bengal got its first Vande Bharat (VB) trainset delivered on the auspicious day – all the way from ICF, Chennai.

There was a time, not many seasons ago, when railfans used to set itineraries in such a way so that they could travel in the then newly introduced Vande Bharat Express or at least could spot it. Someone like me was content with the spotting of VB on several occasions at Varanasi until I decided to experience a ride on nation's first air-conditioned trainset. The second VB had already started its journey by then as I witnessed the unique scene late at night in the New Delhi Railway station where the two VBs stood next to each other. I was overwhelmed with the sight and my desire to witness such a spectacle in my state grew even stronger. With the passage of time, 4 more VBs had rolled out as Bengal patiently waited its turn and hurray, the day has arrived finally. Of the five reported VBs for Bengal, the first one is here connecting Howrah with New Jalpaiguri while the others may probably link Ranchi, Varanasi via Patna, Rourkela and Puri with Calcutta.

VB has witnessed a sea of hope among the avid rail lovers, travellers and passers-by and such has been the craze that the train was tracked and spotted throughout its journey since its despatch from ICF Chennai until its arrival here. It's like a Christmas Gift from Santa as VB arrived in the wee hours of 25th December, 2022. The sparkling, spotless, sophisticated, state-of-the-art Train-18 was enough to impress the masses. Railfans and their friends, families flooded the Liluah Sorting Yard to catch a glimpse of the marvel. [The exclusive Coach Care Centre for Vande Bharat trainset at Bamangachi (Howrah) is yet to be operational]. The trial runs of VB in the following days also drew massive attention as people gathered at stations enroute to witness the 'next best thing' in IR !

Mr. Sudhanshu Mani's brainchild has grown over the years

Cover photo by Somsubhra Das

Red carpet for Bengal's first Vande Bharat *Photo by Rudranil Roy Chowdhury*

Cabin crew all geared up for inaugural run *Photo by Sagnik Gupta*

and has now reached every corner of the nation. This VB happens to be the first in Eastern India and 7th overall after the **New Delhi-Varanasi**, **New Delhi-Katra**, **New Delhi-Amb Andaura**, **Mumbai-Gandinagar Capital**, **Chennai-Mysuru via Bengaluru** and **Nagpur-Bilaspur** services. Many modifications have taken place inside for a higher ride comfort including seats capable of rotating 180 degrees in Executive Class, just as in Vistadome Coaches. IR has already decided not to put Zonal Markings on VB; hence you miss the Eastern Railway stencilling on rake. In truest sense, VBs were meant to replace the Shatabdis wherever they were to be introduced. None of the Shatabdis however haven't been discontinued but the Shatabdis on the New Delhi-Amritsar, Mumbai-Ahmedabad and Chennai-Bengaluru routes have been made to trail VBs all the way. But that's not be the case for this VB as its schedule is opposite from that of the NJP Shatabdi thereby raising expectations of a higher patronage and offering greater alternative for passengers from both terminals.

The VB has already generated quite a stir in the media and public and everyone was just waiting for a formal announcement of its inaugural run. Finally, the day arrived and it was 30th December, 2022 which saw unveiling and dedicating Bengal's First Vande Bharat to the nation and state. **To grace the momentous occasion, the *Kolkata Chapter of the Rail Enthusiasts Society (RES) exclusively* arranged for passes for its members to take ride in the 'new-age' train as Eastern Railway obliged.**

180 ° rotatable seats for Executive class *Photo courtesy Arkopal Sarkar*

Though my office commitments kept me preoccupied to avail myself of the once in a lifetime opportunity, other members of TrainTrackers (Rudranil Roy Chowdhury, Anamitra Bose and Arkopal Sarkar), also members of RES, were onboard to be part of a significant event. My experience from the only ride in Varanasi VB so far has been a pleasant one but for the awkward positioning of charging points beneath the seat in CC Class. Assistance was there onboard but it was harrowing enough to put the charger into the sockets, save a

Members of Rail Enthusiats' Society (Kolkata Chapter) *Photo courtesy Arkopal Sarkar*

Interiors of the VandeBharat Cab *Photos taken by Somsubhra Das*

Souvenir Tickets & gifts on-board *Photo by Rudranil Roy Chowdhury*

thought for the senior citizens and handicapped passengers. My fellow members onboard confirmed that nothing has changed in this aspect. During my last ride, the train had clocked above 110 kmph in the Varanasi-Allahabad stretch which has a not-so-smooth PWay but post Allahabad it had mostly kept its promise of a continual 130 kmph run for most stretches. Expecting such speed mongering throughout on this VB would be a foolhardy expectation as the better part of the tracks enroute have not been certified to execute the full throttle. Never mind, some of the already started VBs don't enjoy this 'luxury' too. Still a VB ride experience kept all of us motivated to the hilt.

Coming back to the D-Day, the craze had reached its zenith. Scampering for passes for the last 12 hours before the journey soured some moods but such glitches and flaws are quite common in such big events which involves logistic and security challenges as part of procedural arrangements. Hosting heavy weights like the Hon'ble Prime Minister, the Hon'ble Chief minister, the Hon'ble Governor along with Minister of Railways (MoR) with other dignitaries on a single platform is a gargantuan task in itself and there exists so many other factors which are usually beyond the scope and control of authorities concerned. After the initial hiccups things did settle down well, though the absence of the Hon'ble Prime Minster due to the sudden demise of his mother did mar the celebrations to some extent. Before the start of the train, almost all the railfans posed with VB showing off their complementary tickets and souvenirs which clearly showed the excitement and delight that had gripped them all. The platform number 22 of the Howrah Station was all decked up for the occasion and red-carpet welcome was on offer to all. At around, 11.40 am VB was flagged off by the MoR, the Governor and the Chief Minister of West Bengal with the Prime Minister joining online from Ahmedabad.

Once onboard, the passengers were greeted with rose and treated to some refreshments and delectable food followed by lunch, evenings snacks and dinner which made the journey even more special. ER had already announced that the inaugural run of the train numbered as 02201 would have stops at Dankuni, Kamarkundu, Masagram, Shaktigarh, Bardhaman, Khana, Bolpur, Ahmadpur, Sainthia, Rampurhat, Chatra, New Farakka, Malda Town, Mukuria Jn., Barsoi, Kishanganj and Aluabari Road enroute. As the train departed Howrah, the passengers inside witnessed a remarkable scene which was never seen before – people residing in the adjoining areas, all equipped with their mobile phones, old and young, belonging from all strata of the

VVIPs inaugurating the Vande Bharat *Photo taken by Anamitra Bose*

Breakfast to dinner... *Photos taken by Arkopal Sarkar*

Photographs courtesy : Team TrainTrackers

VB Interior photos taken by Anamitra Bose & Arkopal Sarkar

society had come to witness the history being made. All through the route, seldom one could find any empty FoBs, empty platforms, empty rooftops, empty roads, empty level crossings and empty boundary walls – all were overcrowded and crammed to the full and packed like sardines. Even the passing trains had several hands sticking out from the doors and windows with cell phone recorders on just to catch a glimpse of Vande Bharat. At every halt, the train was literally taken siege of by the locals as national flags flew everywhere. VB has truly taken the nation by storm!

As VB continued its journey through the evening into the night, so continued the frenzy to watch the semi-bullet train whizz past the stations. People continued to gather braving the December cold as lights from the umpteen mobile screens nearly outshined the headlamps of VB. The NJP arrival of VB at 21.30 hrs. saw a similar scene being re-enacted. The enthusiasm and fervour about VB seemed to be never-ending, the trainset has truly caught the imagination of the people. Vande Bharat Express has created a sensation and pulverised the nation on its way to become a 'National Obsession'. If the arrival of the rake along with the Inaugural

130 kmph run... *Photo by Arkopal Sarkar*

VandeBharat inaugural special arrives at NJP *Photo taken by Arkopal Sarkar*

Run was a Christmas Gift, then the commencement of the Commercial Run is surely a New Year Gift to cherish forever.

Eastern Railway has truly made the Inaugural Journey of Vande Bharat a special one in all aspects. We express sincere gratitude to authorities of Eastern Railway for presenting the 'Railfans' with the golden opportunity to be a part of a historical event. We acknowledge the efforts of all the officials and staff of Eastern Railway involved in the event who played out of their skins to make this event a super success.

:: Vande Bharat Stats ::

- This is the 7th Vande Bharat Express of India
- Commercial Run to commence from **01.01.2023**
- The 16-coach rake manufactured by Integral Coach Factory, Perambur and propulsion is by Medha Servo Drives
- Rake is maintained by Howrah TRS
- Rake composition :

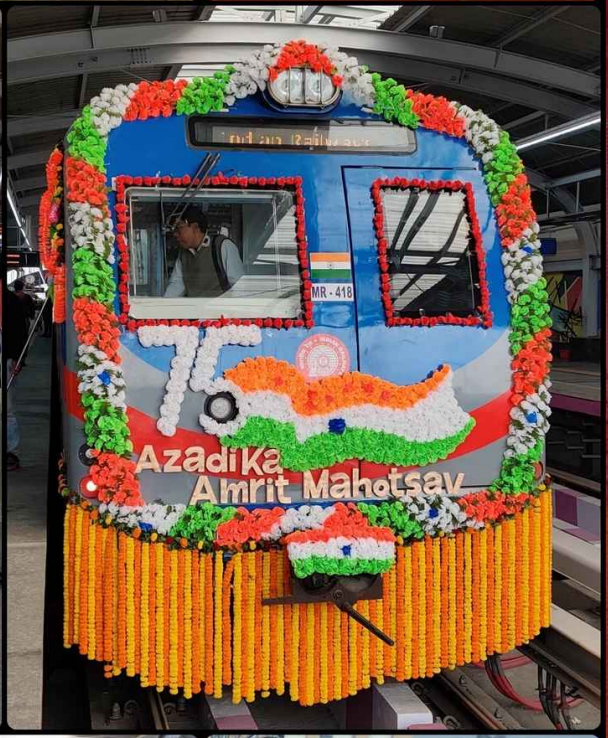
DTC	09	- IR	227654
MC1	33	- IR	227658
TC	17	- IR	227666
MC2	41	- IR	227659
MC1	34	- IR	227660
TC	18	- IR	227667
MC2	42	- IR	227661
NDTC	09	- IR	227656
NDTC	11	- IR	227657
MC2	43	- IR	227662
TC	19	- IR	227668
MC1	35	- IR	227663
MC2	44	- IR	227664
TC	20	- IR	227669
MC1	36	- IR	227665
DTC	10	- IR	227655

- 22301 Howrah NJP Vande Bharat Express will depart Howrah at 05:55 hrs and reach NJP at 13:25 hrs. In return, the train will depart NJP at 15.05 hrs and reach Howrah at 22:35 hrs.
- The train to have scheduled stops at Bolpur, Malda Town and Barsoi
- The train will run on 6 days a week except Wednesdays

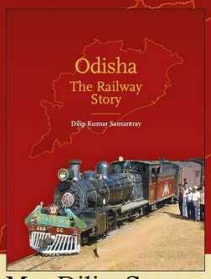
Inaugural Run of

Joka-Esplanade Metro (Phase-1)

Somanko Tiru



EXCLUSIVE COVERAGE!!!

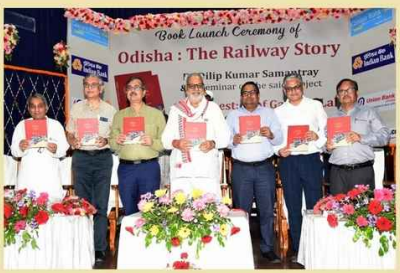


A Grand Book Launch Event

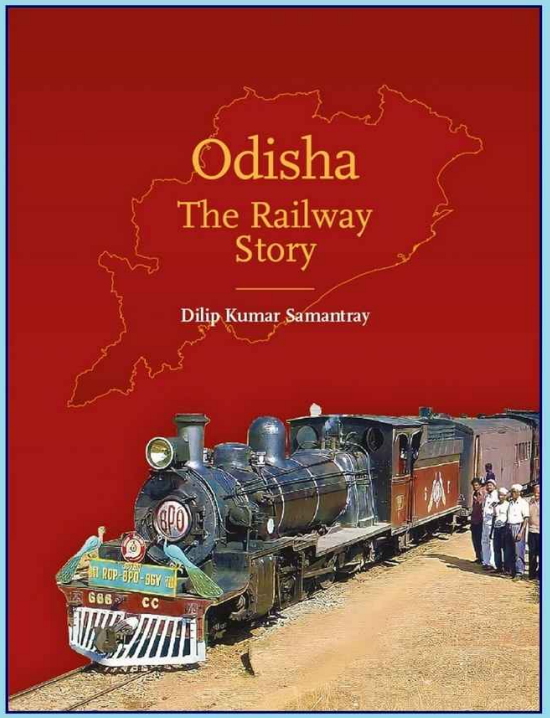
a report by Somsubhra Das

Mr. Dilip Samantray - the former Financial Advisor and Chief Accounts Officer of the East-Coast Railway has penned down a marvel in 'Odisha : The Railway Story' which encapsulates the interesting course of railway development in India over a period of 170 years with a special focus on Odisha. The book narrates a series of interesting facts and anecdotes associated with railways in Odisha and fittingly the Book Launch Ceremony was held at the prestigious Jayadev Bhavan (*previously known as Suchana Bhavan*) at Ashok Nagar in Bhubaneswar.

The coveted book was launched on the grand evening of 4th September, 2022. A team of delegates comprising of members from the Rail Enthusiasts' Society (*Kolkata Chapter*) were invited to attend the gala event and arrangements for food and lodging were made by Mr. Samantray himself. The event was graced by the Hon'ble Governor of Odisha, Prof. Ganeshi Lal – the chief guest along with Mr. K. K. Srivastava, General Manager of ECoR. Mr. Sanjoy Mookerjee – the Retd. Financial Commissioner of Railway Board, Bishnupada Sethi – Principal Secretary, Transport & Higher Education, Govt. of Odisha, Manoj Kumar Mishra – Secretary, IT & Electronics, Govt. of Odisha, Prof. S. R. Pani – the Retd. Director of Distant Education, Utkal University were among the Guests of Honour.



Every dignitary appreciated the effort of the author who has left no stones unturned to unveil the details that became the stepping stone for success for an ever-growing State in front of an otherwise packed auditorium. They congratulated the writer for having authored such a valuable book which throws light on the contribution of railways in the overall development of Odisha which lay in sync with its rich culture and heritage. Prof. S. R. Pani iterated that this book must find a place at every educational institution for its qualitative content which shall continue to enrich generations to come. The conclusive part of the programme saw Mr. Samit Roychoudhury, Mr. Nirakar Das, Mr. Bishnu Mohan Adhikari and Mr. Chittaranjan Panda being felicitated by the Hon'ble Governor for their valuable contribution to bring out this book.



Story of a Phenomenal Metamorphosis

Sanjoy Mookerjee

There are hundreds of books written on the railways in India. Yet one can hardly find one which celebrates the socio-economic evolution of an Indian state in tandem with the growth of rail transportation. This is what this unprecedented book, 'ODISHA – THE RAILWAY STORY' is all about.

This is a book about the Indian Railways from the perspective of the sunrise state of Odisha. Dilip Kumar Samantray the author, takes as much pride in having been born in the state, as he is devoted to the stellar organisation in which he had served. During the past four decades of his railway career, Samantray has been an active contributor to this growth story, when the state conquered centuries of economic stupor and came out valiantly victorious.

It is true that for long, the true potential of Odisha had remained suppressed by the imperialists who ruled India. It was only after independence, led by enlightened leaders, that the rich mineral resources heralded the 'temples of modern India' to bestow their golden touch upon this coastal state. Gradually, Odisha came to be recognised as the future powerhouse of commerce and industry. And with it came the imperative need to connect these centres of enterprise – mines, steel plants, power houses and ports, through a stable and holistic transport network. It was then that the Indian Railways stepped in with all of its courage, skill and determination to connect the far-flung communities and to open up the remote hinterlands of the state, which were considered unreachable till then. The vast mineral wealth of these areas became the harbinger of prosperity and mobility for the people living in these land-locked regions.

In the book, Samantray tells the story of this phenomenal metamorphosis, when the central and state governments, aided by the railway fraternity, worked hand-in-hand in the true spirit of cooperative federalism to lead the state of Odisha towards its dream of economic resurgence. In this spell-binding narration, the author also reminisces on the contribution of the pre-independence railway pioneers, especially the princely states of Odisha, which initiated the first baby steps to build light railways, sometimes against the wishes of the colonial power.

As the story moves from chapter to chapter, the reader is enthralled by the way in which the railway web in Odisha had expanded over the years, breathing life into the state's economy. The author meticulously explains the linkage of each line existing, under construction and as envisioned in future, for Odisha to take position on the railway-crossroads of the nation connecting east to west, north to south, and evolve into a major multi-modal, integrated logistic hub.

The anecdotes about iconic trains and tales of the associated railway institutions make the narrative most interesting. Samantray's collection of rare photographs and the splendid maps created by the renowned cartographer, Samit Roychoudhury instil life into the publication.

Yet this is not merely a book of history. The last chapter is the most intriguing and informative. Narrated by the author from his first-hand experience, this is a must-read case-study for every budding infrastructure student; indeed, it is a ready-reckoner which explains the various stages through which any railway project manager has to negotiate, in order to achieve true success.

Railways in Odisha have undertaken a long journey, spread over a century. From the original East Coast Railway which started operation in the late nineteenth century, the travelogue traverses through the iconic Bengal Nagpur Railway, the Royal Railways, Eastern Railway, South Eastern Railway and finally turns a full circle into today's resurgent East Coast Railway. In the twenty-first century, the railway family continues to work hard in partnership with the state for a glorious tomorrow.

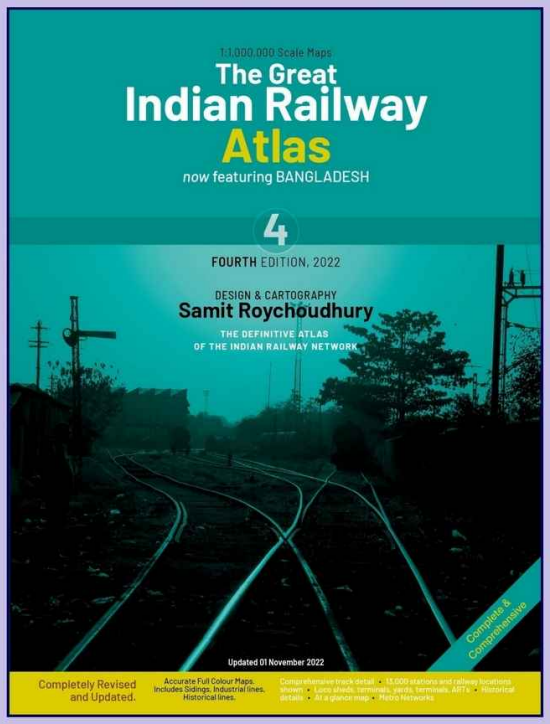
Welcome aboard the train to the future!

Odisha
The Railway
Story

Odisha
The Railway
Story

Cartographic Excellence and Labour of Love

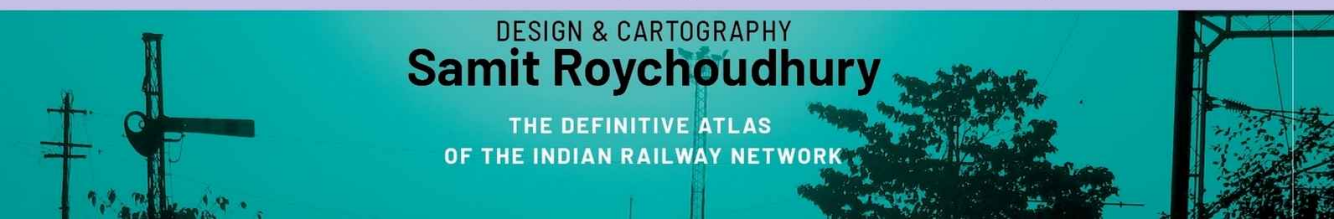
Soumitra Pal



In the early 1850s during the era of Lord Dalhousie as Governor General of India, Indian Railways made a cautious and experimental beginning. Surprising the sceptics, it turned out to be a gamechanger in transportation. The days of horse drawn travel and boat travel were over. As pessimism gave way to optimism craze for railways led to the addition of tracks. Feeder lines of different gauges to the main lines were laid bringing smaller towns within the fold of railways. The Indian peninsula had come under the web of the railways.

Today, being one of the largest systems in the world, Indian railways has a vast and intricate network which binds and unifies the nation. In recent past the passenger burden of many metropolitan cities have been taken over by the railways with the introduction of intra-city rail transportation - the metro. Currently, *"more than 1250 million passengers travel on 12,961 plus trains and well over 2.88 million tonnes of freight are transported everyday in 6000 freight trains between the 7340 plus stations aided by a fleet of over 12,734 locomotives, 79875 coaching vehicles and 302,624 goods wagons aided by 12,50,000 employees".* This gets reflected in the updated fourth edition of the Great Indian Railway Atlas where the author utilising his designing and cartographic skills and experience portrays accurately the maps of all working railways inclusive of the *"entire network, showing every station big or small"* but also gives *"up-to-date indicator about ongoing projects"* including sidings, industrial lines, historical lines, the closed stations and railroads in a simple lucid manner making it a rich storehouse of information of Indian Railways. The edition is an encyclopaedic work par excellence making it indispensable for anyone interested in Indian Railways. The inclusion of Bangladesh Railway network adds to its value. Since some of the Metro maps of Indian cities having such system have been provided, inclusion of a map of Dhaka Metro, which is expecting inauguration shortly, would have given a complete picture of Bangladesh Railway.

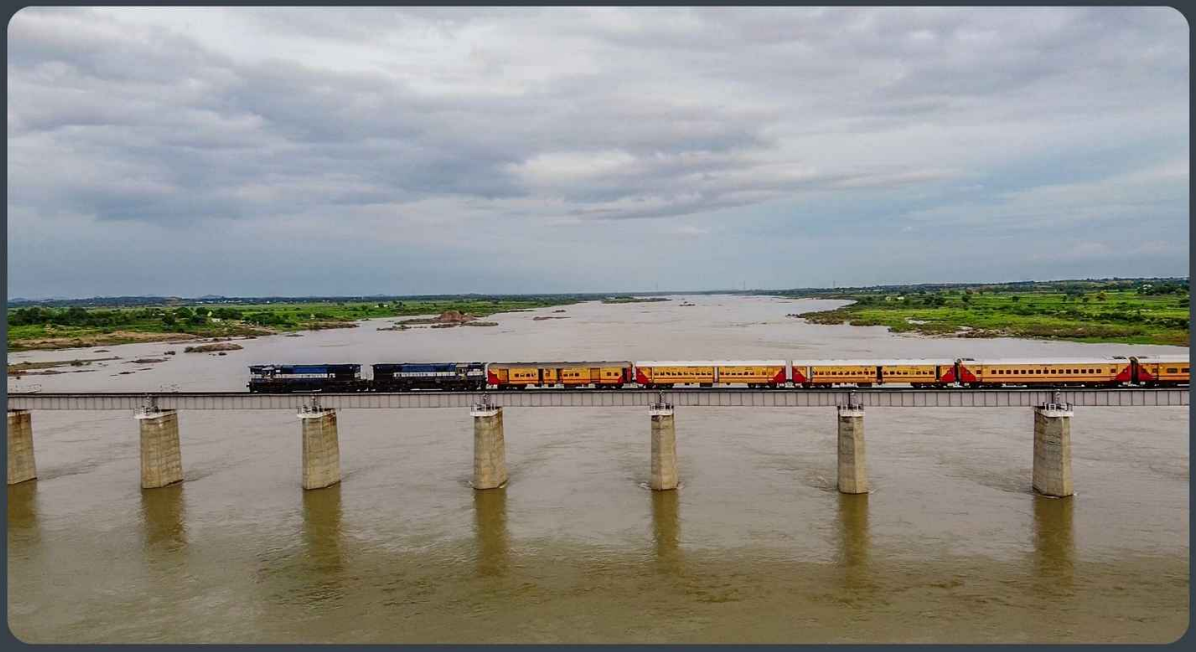
Mr. Pal is retired Justice of Calcutta High Court and former Chairman of West Bengal Administrative Tribunal. Author of Genesis of a Railway Terminus Howrah: 1844-1854.



OBITUARY

Prithvi Raj

you will be missed...



Prithvi Raj

you will be missed...

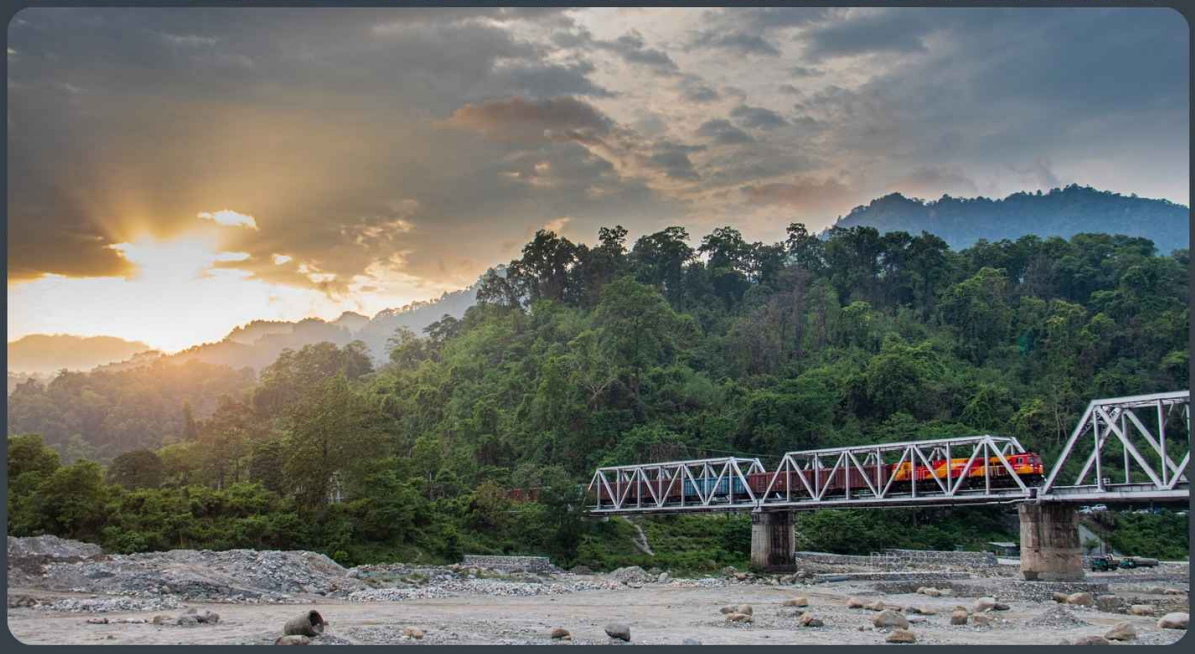


Photo Junction

Saurabh Kumar Yadav

Saurabh Kumar Yadav

K Gautham Karthik

Saurabh Kumar Yadav

Vishal Shenoy

Trayambak Ojha

K Gautham Karthik

Vishal Shenoy

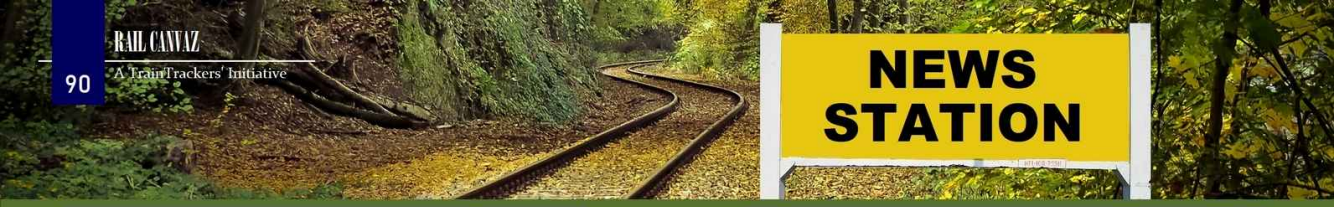
Photo Junction

Ravi Kumar

Vishal Shenoy

K Gautham Karthik

Sumit Nath



Siemens Wins the Bid to Supply 9000 HP Locomotives

Indian Railways had floated a tender in April 2022 for manufacturing 9000 hp locomotives for freight haulage in Dahod Workshop. Siemens has bagged the prestigious project as it has been the lowest bidder in the global tender. In this project, the firm has to supply 1200 locomotives of 9000 horsepower rating over a period of 11 years. The locomotives will be 6-axled Co-Co machines generating 9000 hp and capable of hauling 4500 tonnes of loaded freight. The locomotives will be homed at Visakhapatnam (ECoR), Raipur (SECR), Kharagpur (SER) and Pune (CR). Siemens will manufacture, supply and maintain these locomotives for a period of time under this agreement. Previously, Siemens had supplied the propulsion and steel-tank transformer for the WAG9HH locomotive, the most powerful single-section locomotive of the country, manufactured indigenously at CLW.

Delhi Metro Completed 20 Years of Service to Delhi-NCR

Delhi Metro started its journey with a mere 8.2 Km of Red Line on 24th December, 2002 from Shahdara to Tis Hazari. 20 years later, DMRC operates 391 Km of metro railway on 12 corridors as it has emerged as one of the largest metro systems in the globe. To commemorate the occasion, DMRC arranged some cultural events and exhibition to celebrate 20 years of Delhi Metro as well as 70 years of Indo-Japanese friendship.

IR Runs Aluminium Freight Rakes Developed by Hindalco

IR is on the mission of more freight haulage and lower carbon footprint and for achieving the motto, the Ministry of Railways on 15th October, 2022 launched an aluminium freight rake destined for coal loading. The rakes are developed indigenously by Hindalco's Hirakud facility and fabricated by M/s. BESCO. These rakes are designated as BOBRNALHSM1 with 5-10% higher payload, weighing 180 tonnes less than conventional steel rakes and having lower wear and tear ratio. The 61-wagon aluminium rake was flagged off from Bhubaneswar by the Hon'ble Railway Minister and was used for hauling coal for Hindalco's Aditya Smelter in Lapanga, Odisha.

BHEL Develops World's First Solar Power Plant To Power Railway Traction

BHEL commissioned a 1.7 MW Solar Photovoltaic power plant at Bina, Madhya Pradesh to feed the railway traction grid. The project was jointly conceptualised and implemented by Indian Railways and BHEL. The development of single phase 850 kW single phase inverter and 400 V/ 25KV dry type transformers for outdoor use have been done for the first time. The manufacturing of SCADA systems and HT switch gears have been done at BHEL's Bengaluru and Bhopal plant respectively. The whole project involved the in-house development centres at Bengaluru, Hyderabad, Jhansi and Bhopal. With this, BHEL achieved direct injection of solar power into 25 KV traction substation of IR.

BHEL Resumes WAG7 Production After 8 years

BHEL produced its last conventional WAG7 locomotive # 24700 for IR on 31st March, 2014. After 8 years, BHEL resumes its WAG7 production with the first one #24701 rolling out on 30th September, 2022. While the production units of IR have shifted its focus to three phase locomotives, a fresh rollout of WAG7 is indeed noteworthy. The newly produces WAG7s are fitted with regenerative braking facility which will reduce the energy consumed and increase the energy efficiency of these locomotives.

Train-18 Style High-speed Freight EMU Getting Developed at ICF

In order to venture into the transportation of high-value time-sensitive cargo services, IR is planning to introduce Freight EMU rakes for running parcel services. Getting developed on Vande Bharat or Train18 platform, the rakes will feature pelletised container transportation and maximum speed limit of 160 kmph. Other salient features will include automatic 1800mm wide plug doors, pneumatically retractable rolling floors for handling of pallets, provision for reefer containers to transport temperature sensitive cargo etc. The trainset will have 16 coaches with 50% powering. The trainsets are planned to be operated in Mumbai Suburban and Delhi-NCR regions.

Sanjoy Mookerjee, the author, is a retired railwayman, who is passionate about travel and heritage conservation. His books of short stories entitled 'The Needle Points North' and 'Train to Darjeeling and other Railway Tales', and railway-based novel, 'Howrah Junction' have received wide acclaim. He has also co-authored and edited several books on railway history and development in India.

Assam Mail brings alive incredible stories of the agony and the ecstasy which railway-persons of north-eastern India have faced while trying to keep the lifeline of the Indian Nation running, against the backdrop of separatist movements and their aftermath.

These tales, narrated through the fascinating adventures of the quintessential railwayman Samar Shome, salute the grit and dedication of the railway community in this beautiful, yet challenging land.

Nostalgia is often referred to as a trip full of pleasures. The journey I undertook in Sanjoy Mookerjee's Assam Mail made me feel exactly that. I sincerely want every reader to experience the same...

Jahnu Barua

Padma Bhushan, internationally acclaimed film director and eminent writer.

ISBN 978-81-8206-086-9

9 788182 060869

TOWARDS FREEDOM

Price ₹275

Assam Mail

Sanjoy Mookerjee

LIFE IN RAILWAY'S LAST FRONTIER

After 'The Howrah Junction' here comes another marvel from the vault of Sri Sanjoy Mookerjee

COMING THIS JANUARY

WELL, THAT WAS THAT!!!